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1921-1922

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November 1921

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SCHENECTADY, NEW YORK

In November, February, May and June

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ANNUAL CATALOGUE
OF
UNION UNIVERSITY



1921-1922

PRESS OF
FRANK H EVORY & Co
ALBANY N Y

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UNION UNIVERSITY

Union University embraces the following institutions:
UNION COLLEGE, Founded 1795

| | | |
|----------------------|---|-------------------------------|
| Academic Department | { | Classical Courses |
| | | Latin Scientific Course |
| | | Scientific Courses |
| Technical Department | { | Civil Engineering Course |
| (Established 1845) | | Electrical Engineering Course |
| | | Pre-medical Course |
| | | Chemistry Course |

ALBANY MEDICAL COLLEGE, Founded 1838

ALBANY LAW SCHOOL, Founded 1851

DUDLEY OBSERVATORY, Founded 1852

ALBANY COLLEGE OF PHARMACY, Founded 1881

Union College acquired by its charter, granted in 1795, full university powers, but the creation of graduate institutions at Schenectady was not then found practicable. Schools of law and medicine and also an astronomical observatory have long existed at Albany, only a few miles distant. The arrangement naturally suggested by these circumstances was, that the professional schools and the observatory at Albany should be united with Union College, under the charter and board of trustees of the latter. This was accordingly effected by the incorporation of Union University in 1873. The Albany College of Pharmacy was created by the board of governors on June 21, 1881, and incorporated as a department of the university on August 21 of the same year.

The president of Union College and permanent chancellor of Union University has the oversight of the university, the several institutions having their resident deans. The university board of governors is composed of permanent trustees of Union College and of representatives of each of the other institutions embraced in Union University.

1921 — UNIVERSITY CALENDAR — 1922

1921

First semester Law School begins.....Tuesday, September 20
 First semester Union College begins.....Monday, September 19
 First semester Medical College begins...Monday, September 19
 First semester College of Pharmacy begins Monday, September 26
 Election day — recess.....Tuesday, November 8
 Thanksgiving day — recess.....Thursday, November 24
 Christmas recess in all departments.....Friday, December 23

1922

Sessions resumed.....Wednesday, January 4
 First semester College of Pharmacy ends...Saturday, January 7
 Second semester College of Pharmacy begins Monday, January 16
 Day of prayer for colleges.....Thursday, January 19
 First semester Law School ends.....Wednesday, February 1
 First semester Medical College ends.....Friday, February 3
 Second semester Law School begins.....Monday, February 6
 First semester Union College ends.....Saturday, February 4
 Second semester Medical College begins...Monday, February 6
 Second semester Union College begins....Thursday, February 9
 Washington's birthday — recess.....Wednesday, February 22
 Easter recessFriday-Wednesday, April 14-19
 Commencement, College of Pharmacy.....Thursday, May 4
 Memorial day — recess.....Tuesday, May 30
 Commencement, Law School.....Wednesday, June 7
 Commencement week, Union College,

Thursday-Monday, June 8-12

Commencement, Medical College.....Monday, June 12
 Entrance examinations, Union College,

Tuesday-Wednesday, June 13-14

First semester Union College begins.....Monday, September 18
 First semester Medical College begins...Monday, September 25
 First semester Law School begins.....Tuesday, September 19
 First semester College of Pharmacy begins Monday, September 25
 Thanksgiving day — recess.....Thursday, November 30
 Christmas recess in all departments.....Friday, December 23

For calendars of departments, see pages 21, 22, 152, 174, 178.

OFFICERS OF THE UNIVERSITY

Chancellor

CHARLES ALEXANDER RICHMOND, D. D., LL. D.

Honorary Chancellor, 1921

JOHN WILLIAM DAVIS, LL.D.

Board of Governors

President, EDMUND N. HUYCK, Albany

Vice President, AMASA J. PARKER, LL. D., Albany

Secretary, J. NEWTON FIERO, LL. D., Albany

Union College

| | |
|--|---------------|
| GEORGE ALEXANDER, D. D..... | New York City |
| NICHOLAS V. V. FRANCHOT, A. M..... | Olean |
| EDWIN W. RICE, JR., PH. D., SC. D..... | Schenectady |
| EDWARD P. WHITE, A. M..... | Buffalo |
| EDGAR S. BARNEY, SC. D..... | New York City |
| FRANKLIN H. GIDDINGS, LL. D..... | New York City |
| WILLIS R. WHITNEY, PH. D., SC. D..... | Schenectady |
| FRANK BAILEY, Art D..... | Brooklyn |
| WILLIS T. HANSON..... | Schenectady |
| CHARLES B. McMURRAY, M. A..... | Troy |

Albany Medical College

| | |
|-----------------------------|--------|
| EDMUND N. HUYCK..... | Albany |
| AMASA J. PARKER, LL. D..... | Albany |

Albany Law School

| | |
|-----------------------------|--------|
| WILLIAM PLATT RUDD..... | Albany |
| J. NEWTON FIERO, LL. D..... | Albany |

Dudley Observatory

| | |
|-------------------------------|--------|
| WILLIAM H. SAGE..... | Albany |
| BENJAMIN WALWORTH ARNOLD..... | Albany |

Albany College of Pharmacy

| | |
|-------------------------------------|--------|
| WILLIS G. TUCKER, M. D., PH. D..... | Albany |
| CHARLES GIBSON..... | Albany |

UNIVERSITY FACULTY

CHARLES ALEXANDER RICHMOND, D. D., LL. D.
Chancellor

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Dean of the Faculty, Union College, and Professor of Chemistry

CHARLES F. F. GARIS, M. S.
Dean of Students, Union College, and Professor of Mathematics

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Dean of the Medical College and Associate Professor of Medicine

J. NEWTON FIERO, LL. D.
Dean of the Law School and Lecturer on the Law of Equity,
Evidence, Development of the Law, Current Law,
Trusts, Trustees, and Legal Ethics

WILLIS G. TUCKER, M. D., PH. D.
Dean Emeritus of the College of Pharmacy

WILLIAM MANSFIELD, A. M., PHAR. D.
Dean of the College of Pharmacy and Professor of Pharma-
cognosy, Materia Medica, and Botany

BENJAMIN BOSS, A. B.
Director of Dudley Observatory

FRANK C. BARNES, A. M., PH. D.
Secretary of Union College and Professor of Modern Languages

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Professor Emeritus of Obstetrics and Diseases of Children

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Professor Emeritus of Ophthalmology and Otology

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Ichabod Spencer Professor Emeritus of Philosophy

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Construction, Personal Property, Sales, and Bankruptcy

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Instructor in Pediatrics

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FRANCIS J. O'BRIEN, PH. G.
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RALPH YOUNG, PH. G.
Instructor in Pharmacognosy, Materia Medica and Botany

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Instructor in Physics

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Instructor in Surgery

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Instructor in Obstetrics

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LEROY JENKINS, A. B.
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SEBASTIAN ALBRECHT, PH. D.
Assistant in Dudley Observatory

SHERWOOD B. GRANT, C. E.
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RALPH E. WILSON, PH. D.
Assistant in the Dudley Observatory

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CHARLES MONTAGUE BAKEWELL, PH. D.
(*Professor of Philosophy in Yale University*)
Ichabod Spencer Lecturer on Psychology

IRVING LANGMUIR, PH. D.
Lecturer in Theoretical Chemistry

ALBERT W. HULL, PH. D.
Lecturer in Crystallography and X-Rays

WHEELER P. DAVEY, PH. D.
Lecturer in Crystallography and X-Rays

SAUL DUSHMAN, PH. D.
Lecturer on the Atomic Structure

FLOYD K. RICHTMYER, PH. D.
Lecturer on Modern Problems of Physics

UNION COLLEGE

Union College was incorporated by the Regents of the University of the State of New York on the 25th day of February, 1795. It was the second college incorporated in the state, and the first north of the city of New York and west of the Hudson river. It received its name from the circumstance that several religious denominations co-operated in its organization, and it was the first college in the United States which was not of a strictly denominational character. It has continued from its foundation to be a representative institution of Christian unity.

The first president of Union College was the Rev. John Blair Smith, of Philadelphia. He was elected in 1795, and resigned in 1799, only a few months before his death. He was succeeded by Jonathan Edwards, the younger, who died in 1801. The Rev. Jonathan Maxcy, previously president of Brown University, succeeded Dr. Edwards, resigning at the end of two years. In 1804 the Rev. Eliphalet Nott was elected president of Union College, which office he held until his death, on the 29th day of January, 1866. The Rev. Laurens P. Hickok, a graduate of the college, who had long acted as vice-president, was elected his successor. He resigned in 1868. The Rev. Charles A. Aiken succeeded Dr. Hickok in 1869, and resigned in 1871. The Rev. Eliphalet Nott Potter was elected president in 1871, and was inaugurated June 20, 1872. On his resignation, in 1884, the Hon. Judson S. Landon was appointed president *ad interim*, and served until the inauguration of Harrison E. Webster, who was elected president May 23, 1888, and inaugurated June 26, 1888. On his resignation, in January, 1894, Rev. Andrew V. V. Raymond was elected president, and was inaugurated in June, 1894. Dr. Raymond resigned July 18, 1907, and the Rev. George Alexander was appointed president *ad interim*. On January 28, 1909, Rev. Charles Alexander Richmond was elected president. Dr. Richmond was inaugurated June 7, 1909.

| 1921 | | | | | | | | | | | | | | | |
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| | S | M | T | W | T | F | S | | S | M | T | W | T | F | S |
| Sept. | .. | .. | .. | .. | 1 | 2 | 3 | Nov. | .. | .. | 1 | 2 | 3 | 4 | 5 |
| | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| | 25 | 26 | 27 | 28 | 29 | 30 | .. | | 27 | 28 | 29 | 30 | .. | .. | .. |
| Oct. | .. | .. | .. | .. | .. | .. | 1 | Dec. | .. | .. | .. | .. | .. | .. | .. |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | .. | .. | .. | .. | .. | .. | .. |
| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| | 23 | 24 | 25 | 26 | 27 | 28 | 29 | | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| | 30 | 31 | .. | .. | .. | .. | .. | | 25 | 26 | 27 | 28 | 29 | 30 | 31 |

| 1922 | | | | | | | | | | | | | | | |
|------|----|----|----|----|----|----|----|-------|----|----|----|----|----|----|----|
| | S | M | T | W | T | F | S | | S | M | T | W | T | F | S |
| Jan. | .. | .. | .. | .. | .. | .. | .. | July | .. | .. | .. | .. | .. | .. | 1 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| | 15 | 16 | 17 | 18 | 19 | 20 | 21 | | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| | 22 | 23 | 24 | 25 | 26 | 27 | 28 | | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| Feb. | 29 | 30 | 31 | .. | .. | .. | .. | Aug. | 30 | 31 | .. | .. | .. | .. | .. |
| | .. | .. | .. | 1 | 2 | 3 | 4 | | .. | .. | 1 | 2 | 3 | 4 | 5 |
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| Mar. | 26 | 27 | 28 | .. | .. | .. | .. | Sept. | 27 | 28 | 29 | 30 | 31 | .. | .. |
| | .. | .. | .. | 1 | 2 | 3 | 4 | | .. | .. | .. | .. | .. | .. | 1 |
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| Apr. | 26 | 27 | 28 | 29 | 30 | 31 | .. | Oct. | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| | .. | .. | .. | .. | .. | .. | 1 | | .. | .. | .. | .. | .. | .. | .. |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| May | 23 | 24 | 25 | 26 | 27 | 28 | 29 | Nov. | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| | 30 | .. | .. | .. | .. | .. | .. | | 29 | 30 | 31 | .. | .. | .. | .. |
| | .. | 1 | 2 | 3 | 4 | 5 | 6 | | .. | .. | .. | .. | .. | .. | .. |
| | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | .. | .. | .. | 1 | 2 | 3 | 4 |
| | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| June | 21 | 22 | 23 | 24 | 25 | 26 | 27 | Dec. | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | 28 | 29 | 30 | 31 | .. | .. | .. | | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| | .. | .. | .. | .. | .. | .. | .. | | 26 | 27 | 28 | 29 | 30 | .. | .. |
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| | .. | 5 | 6 | 7 | 8 | 9 | 10 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| | 25 | 26 | 27 | 28 | 29 | 30 | .. | | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| | .. | .. | .. | .. | .. | .. | .. | | 31 | .. | .. | .. | .. | .. | .. |

Figures in heavy roman type indicate days on which Union College is in session

UNION COLLEGE CALENDAR

Year 1921-1922

1921

Entrance examinations.....Thursday-Friday, September 15-16
 Registrations, upper classes...Thursday-Friday, September 15-16
 Conditions examinations.....Friday-Saturday, September 16-17
 Registration day for freshmen.....Saturday, September 17
 First Chapel exercises and recitations....Monday, September 19
 Extension courses open.....Monday, October 3
 Election day—recess.....Tuesday, November 8
 Thanksgiving recess, beginning noon, Wednesday, November 23
 Classes resumed.....Monday, November 28
 Entrance conditions examinations, Friday-Saturday, December 2-3
 Allison Foote debate.....Friday, December 16
 Christmas recess, beginning.....Friday, December 23

1922

Classes resumed.....Tuesday, January 3
 Day of prayer for colleges.....Thursday, January 19
 Examinations begin, first semester.....Wednesday, January 25
 Junior Week..Thursday noon, February 2-Saturday, February 4
 First semester ends.....Saturday, February 4
 Classes begin, second semester.....Thursday, February 9
 Washington's birthday—recess.....Wednesday, February 22
 Conditions examinations.....Friday-Saturday, April 7-8
 Easter recess.....Friday-Wednesday, April 14-19
 Selection of junior and sophomore orators....Saturday, April 15
 Presentation of prize essays.....Monday, May 1
 Moving-up day.....Saturday, May 20
 Senior examinations begin.....Monday, May 22
 Senior examinations end.....Saturday, May 27
 Examinations begin, second semester.....Monday, May 29
 Memorial day—recess.....Tuesday, May 30
 Examinations end, second semester.....Thursday, June 8
 Prize oratory of juniors and sophomores.....Thursday, June 8
 Meeting of trustees, alumni, societies.....Friday, June 9
 President's reception.....Friday, June 9
 Alumni day.....Saturday, June 10
 Baccalaureate sermon.....Sunday, June 11
 Commencement, second Monday in June.....Monday, June 12
 Entrance examinations.....Tuesday-Wednesday, June 13-14

UNION COLLEGE CALENDAR

Year 1922-1923

1922

Entrance examinations.....Thursday-Friday, September 14-15
 Registrations, upper classes...Thursday-Friday, September 14-15
 Conditions examinations.....Friday-Saturday, September 15-16
 Registration day for freshmen.....Saturday, September 16
 First Chapel exercises and recitations....Monday, September 18
 Extension courses open.....Monday, October 2
 Thanksgiving recess, beginning noon, Wednesday, November 29
 Classes resumed.....Monday, December 4
 Entrance conditions examinations,

Friday-Saturday, December 8-9

Allison Foote debate.....Friday, December 15
 Christmas recess, beginning.....Saturday, December 23

1923

Classes resumed.....Wednesday, January 3
 Day of prayer for colleges.....Thursday, January 18
 Examinations begin, first semester.....Wednesday, January 24
 Junior week..Thursday noon, February 1-Saturday, February 3
 First semester ends.....Saturday, February 3
 Classes begin, second semester.....Thursday, February 8
 Washington's birthday — recess.....Tuesday, February 22
 Easter recess.....Friday-Wednesday, March 30-April 4
 Conditions examinations.....Friday-Saturday, April 6-7
 Selection of junior and sophomore orators....Monday, April 16
 Presentation of prize essays.....Tuesday, May 1
 Moving-up day.....Saturday, May 19
 Senior examinations begin.....Monday, May 21
 Senior examinations end.....Saturday, May 26
 Examinations begin, second semester.....Monday, May 28
 Memorial day — recess.....Wednesday, May 30
 Examinations end, second semester.....Thursday, June 7
 Prize oratory of juniors and sophomores.....Thursday, June 7
 Meeting of trustees, alumni, societies.....Friday, June 8
 President's reception.....Friday, June 8
 Alumni day.....Saturday, June 9
 Baccalaureate sermon.....Sunday, June 10
 Commencement, second Monday in June.....Monday, June 11
 Entrance examinations.....Tuesday-Wednesday, June 12-13

TRUSTEES OF UNION COLLEGE

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- PROF. FRANKLIN H. GIDDINGS, LL. D., Columbia Univer-
 sity, New York
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- CHARLES B. McMURRAY, A. M., Cannon Place, Troy
- WILLIS R. WHITNEY, PH. D., Sc. D., Research Laboratory,
 Gen. Elec. Co., Schenectady
- EDMUND N. HUYCK, Albany, N. Y.
- REV. ROCKWELL HARMON POTTER, D. D., Hartford,
 Conn.
- HIRAM C. TODD, PH. B., Saratoga, term of office expiring
 June, 1923
- FRANK BURTON, A. B., Gloversville, term of office expiring
 June, 1924
- J. MONTGOMERY MOSHER, A. M., M. D., 170 Washington
 avenue, Albany, N. Y., term of office expiring June, 1925
- GEORGE C. FOOTE, B. E., Port Henry, N. Y., term of office
 expiring June, 1922

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Assistant Professor of German

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Assistant Professor of German and French

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Director of Physical Education

EDMUND TILLY
Instructor in French and German

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Instructor in French and Spanish

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Instructor in Hygiene and Surgeon in Charge

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Instructor in Mathematics

HENRY ALFRED SCHAUFFLER, C. E.
Instructor in Drawing

ARTHUR LEWIS GREELEY, A. B.
Instructor in Chemistry

RAYMOND MATHEWS, B. S.
Instructor in Drawing and Descriptive Geometry

HARRISON CADWALLADER COFFIN, PH. D.
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Instructor in Electrical Engineering

DONALD GOODCHILD, A. B.
Instructor in English

EDWARD FRANCIS OAKES, A. M.
Instructor in English

FERNAND JAGU, L. S.
Instructor in French

SAMUEL ROBINSON, M. S. in E. E.
Instructor in Physics

LOUIS AYCRIGGE DERONDE, C. E.
Instructor in Mathematics

WILLIAM LEROY WARNER, B. S. in E. E.
Instructor in Mathematics

EDWARD BEATTIE STEPHENSON, PH. D.
Instructor in Physics

JAMES MASON CLINE, A. B.
Instructor in English

OLIVER JOHN IRISH, A. B.
Instructor in Biology

RALPH DECKER BENNETT, B. S. in E. E.
Instructor in Mathematics

RUDOLPH SCHATZEL, B. S. in CH.
Instructor in Chemistry

DEWITT SMITH SNELL, M. S. in E. E.
Instructor in Electrical Engineering

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CHARLES MONTAGUE BAKEWELL, PH. D.
(*Professor of Philosophy in Yale University*)
Ichabod Spencer Lecturer on Psychology

IRVING LANGMUIR, PH. D.
Lecturer in Theoretical Chemistry

ALBERT W. HULL, PH. D.
Lecturer in Crystallography and X-Rays

WHEELER P. DAVEY, PH. D.
Lecturer in Crystallography and X-Rays

SAUL DUSHMAN, PH. D.
Lecturer on the Atomic Structure

FLOYD K. RICHTMYER, PH. D.
Lecturer on Modern Problems of Physics

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CATALOGUE — Professors Barnes, Garis, Hale

CONFERENCE — Professors Ellery, Garis, Hale, McKibben, Berg, Chidsey.

CONVENTIONS — Professors March, Stoller, Chidsey

DISCIPLINE — Professors Ellery, Garis, Barnes, Berg, McKibben, Wold, Waldron

LIBRARY — Mr. Miller (Librarian), and Professors Hale, Ripton, Ellery, Berg, McKibben, March

SCHOLARSHIPS — Professors Ellery, Kellogg, Mavor

STAGE APPOINTMENTS — Professors McKean, Berg, McKibben, Chase

STUDENT ACTIVITIES — Professors Opdyke, Garis, Waldron

COLLEGE OFFICERS

All administrative offices are in the Administration Building

CHARLES ALEXANDER RICHMOND, D. D., LL. D.

President — Room 6

Consultation hour 12-1 daily

EDWARD ELLERY, A. M., PH. D., Sc. D.

Dean of the Faculty — Room 8

Office Hours 3-5 P. M.*

CHARLES F. F. GARIS, M. S.

Dean of Students — Room 1

Office Hours 3-5 P. M.*

FRANK BAILEY, ART. D.

Treasurer

175 Remsen St., Brooklyn

HARTLEY F. DEWEY

Assistant Treasurer — Room 3

Office Hours 8 A. M.-5 P. M.*

FRANK COE BARNES, PH. D.

Secretary — Room 2

Office Hours 3-5 P. M.*

ESTHER G. ELY

Registrar — Room 4

Office Hours 8 A. M.-5 P. M.*

JAMES H. STOLLER, PH. D.

Curator of the Museum

CHARLES N. WALDRON, B. S.

Secretary of the Graduate Council — Room 5

DEWITT CLINTON

Librarian Emeritus

WHARTON MILLER, B. S.

Librarian

Library Hours 8 A. M.-1 P. M., 2-6 P. M.*, 7:30-9 P. M.

* Except Saturday P. M.

COURSES OF STUDY

1. Courses leading to the Degree of A. B.

In the last two years of these courses all studies are elective.

A. B. Course A. Greek is required for admission to this course. Latin and Greek are continued for two years. See pages 33, 99.

A. B. Course B. This course may be pursued by candidates who satisfy the requirements for admission to the Course E. Greek is begun on entrance and required for two years. See pages 33, 100.

A. B. Course C. This course is based on the study of mathematics and the sciences, with extended work in English and other modern languages. See pages 34, 101.

A. B. Course D. This course continues the study of Latin in place of the work in modern languages required in Course C. See pages 34, 102.

A. B. Course E. This course offers Latin without Greek, for which is substituted work in modern languages. See pages 34, 104.

Students in the classes of 1922, 1923 and 1924 who satisfactorily complete Course C, Course D or Course E will receive the degree of B.S.

After 1924 the degree of B.S. will be conferred only on those candidates who comply with the Regulation stated on page 105.

Students in full standing at the end of junior year who have the profession of medicine in view are permitted to take the first year studies of the Albany Medical College as a substitute for the studies of the senior year in Union College. The academic degree is conferred on the successful completion of the first year in the Medical College.

2. Course leading to the Degree of B. S. in C. E.

Civil Engineering Course. This course offers the foundation of a broad engineering education, comprising all the essential subjects of the profession. During the third and fourth years two alternative options are offered. See pages 34, 106.

Technical Option. In this division the fundamental principles of advanced technical subjects receive emphasis.

Administrative Option. In this division studies are offered which lead to a training for engineering positions of an executive or administrative nature.

3. Course leading to the Degree of B. S. in E. E.

Electrical Engineering Course. This course is intended to give a broad and thorough engineering education, with the specific instruction requisite for electrical engineering. During the first two years of the course the work is the same as in the civil engineering course; during the junior and senior years the two courses are wholly distinct. See pages 35, 109.

4. Course leading to the Degree of B. S. in Chemistry

Chemistry Course. This course prepares for positions in industrial chemistry, for teaching chemistry, or for university studies in candidacy for a doctor's degree in chemistry. See pages 35, III.

5. Two Year Pre-Medical Course

Medical Preparatory Course. This course is offered to meet the requirements for admission to the Medical Department of Union University in accordance with the recommendations of the American Medical Association. See pages 35, 113.

6. Courses leading to Graduate Degrees

These courses are open to graduates of Union College, or of any institution of a standing recognized by the faculty, who have done the necessary undergraduate work.

Course leading to degree of M. S. in C. E. This course of one year's graduate study consists of lectures, laboratory practice, and research work. See pages 65, 132.

Course leading to degree of M. S. in E. E. This course of one year's graduate study consists of lectures, laboratory practice and research work. See pages 72, 132.

Course leading to degree of M. S. in Ch. This course of one year's graduate study consists of lectures, laboratory practice, and research work. See pages 72, 132.

Course leading to degree of Ph. D. This course of two years' graduate study requires for admission the degree of M. S. in E. E. or an equivalent. See pages 72, 133.

REQUIREMENTS FOR ADMISSION

Application and Registration

Blank forms of application to be filled out and forwarded in advance will be furnished by the secretary on request.

Candidates must be at least sixteen years old, and as a preliminary to registration, whether for examination or for enrollment, must present themselves at the office of the secretary on the date named in the calendar published in the college catalogue for the current year, and submit satisfactory testimonials of character.

Methods of satisfying the Requirements

By Examination. The regular entrance examinations are held on the Thursday and Friday immediately following Commencement, and on the Tuesday and Wednesday of the first week of the first semester. The schedule of examinations is given on pages 46-47. Candidates for examination in any subject are expected to present a recommendation from their school principal.

By C. E. E. B. Certificate. Candidates may take the uniform entrance examinations offered by the College Entrance Examination Board. The examinations of the board are held in June of each year, and a list of the places at which they are to be held is published by the board about March 1st. Applications to attend the board's examinations must be addressed to *College Entrance Examination Board, 431 West 117th Street, New York, N. Y.*, and must be made upon a blank form to be obtained from the secretary of the board upon request. The certificates of this board are accepted for all subjects passed at a satisfactory grade.

By Regents Diploma. The academic and college entrance diplomas issued by the New York State Education Department are accepted so far as they cover the requirements for admission to the course desired.

By School Certificate. Certificates from schools approved by the faculty are accepted for graduates of the school if they cover satisfactorily the requirements for admission to the course desired; in subjects of unsatisfactory grade an examination is

required. For non-graduates certificates may, on recommendation by the principal, be accepted for subjects other than English, mathematics and modern language. Blank certificates, to be filled out by principals of schools, are furnished upon application to the *Secretary, Union College, Schenectady, N. Y.*

So far as possible all credentials should be forwarded by July 10 of the year in which the candidate desires to enter, and it is expected that all certificates will be submitted not later than September 1st.

Students who enter the freshman class and fail to maintain their class standing are required to pass entrance examinations in the departments in which they have failed, if they apply for readmission.

Candidates who in any year are required, because of non-graduation or low grades, to take entrance examinations are not allowed credit for examinations passed unless admitted in that year.

Subjects Required for Admission to Each Course

Candidates for admission to the freshman class in any course must meet the requirements specified for that course. The subjects are numbered as in the general list given on pages 35-45.

The term *unit* is used in this catalogue in the sense established by the Carnegie Foundation and the College Entrance Examination Board, and means a course of 4 or 5 periods weekly throughout an academic year of the preparatory school.

A. B. Course A. For admission to this course the following subjects are required:

| | | |
|---------------------------|------------------|----------|
| 1. English: a, b..... | See Page 35..... | 3 units |
| 2. Greek: a, b, c..... | See Page 41..... | 3 units |
| 3. Latin: a, b, c, d..... | See Page 41..... | 4 units |
| 5. Mathematics: a, b..... | See Page 44..... | 2½ units |
| 7. History: a, b, c..... | See Page 45..... | 2 units |
| 8. Electives..... | See Page 45..... | ½ units |

Total 15 units

A.B. Course B. For admission to this course the following subjects are required:

| | | |
|---------------------------------------|------------------|----------|
| 1. English: a, b..... | See Page 35..... | 3 units |
| 3. Latin: a, b, c, d..... | See Page 41..... | 4 units |
| 4. Modern Languages: a or b or c..... | See Page 42..... | 2 units |
| 5. Mathematics: a, b..... | See Page 44..... | 2½ units |
| 7. History: a, b, c..... | See Page 45..... | 2 units |
| 8. Electives .. | See Page 45..... | 1½ units |

Total 15 units

A.B. Course C. For admission to this course the following subjects are required:

| | | |
|------------------------------------|------------------|----------|
| 1. English: a, b..... | See Page 35..... | 3 units |
| 4. Modern Languages: a or b or c.. | See Page 42..... | 2 units |
| 5. Mathematics: a, b..... | See Page 44..... | 2½ units |
| 6. Science | See Page 44..... | 1 unit |
| 7. History: c..... | See Page 45..... | 1 unit |
| 8. Electives | See Page 45..... | 5½ units |

Total 15 units

A.B. Course D. For admission to this course the following subjects are required:

| | | |
|---------------------------|------------------|----------|
| 1. English: a, b..... | See Page 35..... | 3 units |
| 3. Latin: a, b, c, d..... | See Page 41..... | 4 units |
| 5. Mathematics: a, b..... | See Page 44..... | 2½ units |
| 6. Science..... | See Page 44..... | 1 unit |
| 7. History: c..... | See Page 45..... | 1 unit |
| 8. Electives | See Page 45..... | 3½ units |

Total 15 units

A.B. Course E. For admission to this course the following subjects are required:

| | | |
|------------------------------------|------------------|----------|
| 1. English: a, b..... | See Page 35..... | 3 units |
| 3. Latin: a, b, c, d..... | See Page 41..... | 4 units |
| 4. Modern Languages: a or b or c.. | See Page 42..... | 2 units |
| 5. Mathematics: a, b..... | See Page 44..... | 2½ units |
| 7. History: a, b, c..... | See Page 45..... | 2 units |
| 8. Electives | See Page 45..... | 1½ units |

Total 15 units

B.S. Course in C.E. For admission to this course the following subjects are required:

| | | |
|------------------------------------|------------------|----------|
| 1. English: a, b..... | See Page 35..... | 3 units |
| 4. Modern Languages: a or b or c.. | See Page 42..... | 2 units |
| 5. Mathematics: a, b..... | See Page 44..... | 2½ units |
| 6. Science | See Page 44..... | 1 unit |
| 7. History: c..... | See Page 45..... | 1 unit |
| 8. Electives | See Page 45..... | 5½ units |

Total 15 units

B.S. Course in E.E. For admission to this course the following subjects are required:

| | | |
|---------------------------------------|------------------|----------|
| 1. English: a, b..... | See Page 35..... | 3 units |
| 4. Modern Languages: a or b or c..... | See Page 42..... | 2 units |
| 5. Mathematics: a, b. | See Page 44..... | 2½ units |
| 6. Science..... | See Page 44..... | 1 unit |
| 7. History: c..... | See Page 45..... | 1 unit |
| 8. Electives..... | See Page 45..... | 5½ units |

Total 15 units

Beginning with September, 1923, solid geometry and plane trigonometry will be required for admission to this course.

B.S. Course in Chemistry. For admission to these courses the following subjects are required:

| | | |
|---------------------------------------|------------------|----------|
| 1. English: a, b..... | See Page 35..... | 3 units |
| 4. Modern Languages: a or b or c..... | See Page 42..... | 2 units |
| 5. Mathematics: a, b. | See Page 44..... | 2½ units |
| 6. Chemistry | See Page 44..... | 1 unit |
| 7. History: c..... | See Page 45..... | 1 unit |
| 8. Electives..... | See Page 45..... | 5½ units |

Total 15 units

Pre-Medical Course. For admission to this course the following subjects are required:

| | | |
|---------------------------------------|-------------------|----------|
| 1. English: a, b..... | See Page 35 | 3 units |
| 4. Modern Languages: a or b or c..... | See Page 42 | 2 units |
| 5. Mathematics: a, b. | See Page 44 | 2½ unit |
| 6. Science | See Page 44 | 1 units |
| 7. History: c | See Page 45 | 1 unit |
| 8. Electives..... | See Page 45 | 5½ units |

Total 15 units

Beginning with September, 1923, the science offered for this course must be chemistry.

Advanced Standing. Candidates from other colleges must bring letters of honorable dismissal, and certificates showing work done. Candidates for a degree must enter not later than the beginning of the senior year.

Requirements in Individual Subjects

1. English (3 units)

The study of English in school has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

Grammar and Composition

The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, sentences, and paragraphs should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise letter-writing, narration, description, and easy exposition and argument. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

Literature

The second object is sought by means of two lists of books, headed respectively *Reading* and *Study*, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their place in literary history.

A. Reading

The aim of this course is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least *two* selections are to be made, except as otherwise provided under Group I.

GROUP I. Classics in Translation

The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther. The Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII. The Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI. The Aeneid. The Odyssey, Iliad and Aeneid should be read in English translations of recognized literary excellence. For any selection from this group a selection from any other group may be substituted.

GROUP II. Shakespeare

Midsummer-Night's Dream, Merchant of Venice, As You Like It, Twelfth Night, The Tempest, Romeo and Juliet, King John, Richard II, Richard III, Henry V, Coriolanus, Julius Caesar, Macbeth, Hamlet. The last three if not chosen for study under B.

GROUP III. Prose Fiction

Malory, Morte d'Arthur (about 100 pages); Bunyan, Pilgrim's Progress, Part I; Swift, Gulliver's Travels (voyages to Lilliput and to Brobdingnag); Defoe, Robinson Crusoe, Part I; Goldsmith, Vicar of Wakefield; Frances Burney, Evelina; Scott's Novels, any one; Jane Austen's Novels, any one; Maria Edgeworth, Castle Rackrent, or The Absentee; Dickens' Novels, any one; Thackeray's Novels, any one; George Eliot's Novels, any one; Mrs. Gaskell, Cranford; Kingsley, Westward Ho! or Hereward the Wake; Reade, The Cloister and the Hearth; Blackmore, Lorna Doone; Hughes, Tom Brown's Schooldays; Stevenson, Treasure Island, or Kidnapped, or Master of Ballantrae; Cooper's Novels, any one; Poe, Selected Tales; Hawthorne, The House of the Seven Gables, or Twice Told Tales, or Mosses from an Old Manse; a collection of Short Stories by various standard writers.

GROUP IV. Essays, Biography, etc.

Addison and Steele, *The Sir Roger de Coverley Papers*, or selections from the *Tatler* and the *Spectator* (about 200 pages); Boswell, selections from the *Life of Johnson* (about 200 pages); Franklin, *Autobiography*; Irving, selections from the *Sketch Book* (about 200 pages), or *Life of Goldsmith*; Southey, *Life of Nelson*; Lamb, selections from the *Essays of Elia* (about 100 pages); Lockhart, selections from the *Life of Scott* (about 200 pages); Thackeray, lectures on Swift, Addison and Steele in the *English Humorists*; Macaulay, any one of the following essays: Lord Clive, Warren Hastings, Milton, Addison, Goldsmith, Frederick the Great, Madame d'Arblay; Trevelyan, selections from the *Life of Macaulay* (about 200 pages); Ruskin, *Sesame and Lilies*, or *Selections* (about 150 pages); Dana, *Two Years before the Mast*; Lincoln, *Selections*, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, the Letter to Horace Greeley, together with a brief memoir or estimate of Lincoln; Parkman, *The Oregon Trail*; Thoreau, *Walden*; Lowell, *Selected Essays* (about 150 pages); Holmes, *The Autocrat of the Breakfast Table*; Stevenson, *An Inland Voyage and Travels with a Donkey*; Huxley, *Autobiography* and selections from *Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*; a collection of *Essays* by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers; a collection of *Letters* by various standard writers.

GROUP V. Poetry

Palgrave's *Golden Treasury* (First Series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Palgrave's *Golden Treasury* (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study under B); Goldsmith, *The Traveller* and *The Deserted Village*; Pope, *The Rape of the Lock*; a collection of English and Scottish Ballads, as, for example, some Robin Hood ballads, *The Battle of Otterburn*, *King Estmere*, *Young Beichan*, *Bewick* and *Grahame*, *Sir Patrick Spens*, and a selection from

later ballads; Coleridge, *The Ancient Mariner*, *Christabel*, and *Kubla Khan*; Byron, *Childe Harold*, Canto III or IV, and *The Prisoner of Chillon*; Scott, *The Lady of the Lake*, or *Marmion*; Macaulay, *The Lays of Ancient Rome*, *The Battle of Naseby*, *The Armada*, *Ivry*; Tennyson, *The Princess*, or *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Browning, *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa — Down in the City*, *The Italian in England*, *The Patriot*, *The Pied Piper*, "*De Gustibus*" —, *Instans Tyrannus*; Arnold, *Sohrab and Rustum*, and *The Forsaken Merman*; selections from *American Poetry*, with special attention to Poe, Lowell, Longfellow, and Whittier.

B. Study

This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

GROUP I. Drama

Shakespeare, *Julius Caesar*, *Macbeth*, *Hamlet*.

GROUP II. Poetry

Milton, *L'Allegro*, *Il Penseroso*, and either *Comus* or *Lycidas*; Tennyson, *The Coming of Arthur*, *The Holy Grail*, and *The Passing of Arthur*; [Book IV of *Palgrave's Golden Treasure* (First Series)], with especial attention to Wordsworth, Keats, and Shelley.

GROUP III. Oratory

Burke, *Speech on Conciliation with America*; Washington's *Farewell Address*; Webster's *First Bunker Hill Oration*, and Lincoln's *Gettysburg Address*.

GROUP IV. Essays

Carlyle, Essay on Burns, with a selection from Burns's Poems;
Macaulay, Life of Johnson.

Examination

The examination is divided into two parts, one of which will be on grammar and composition, and the other on literature.

However accurate in subject-matter, no paper can be considered satisfactory if seriously defective in punctuation, spelling or other essentials of good usage.

In grammar and composition, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors. The main test in composition will consist of one or more essays, developing a theme through several paragraphs; the subjects will be drawn from the books read, from the candidate's other studies or from his personal knowledge and experience quite apart from reading. For this purpose the examiner will provide several subjects from which the candidate may make his own selections. He will not be expected to write more than four hundred words per hour.

The examination in literature includes:

a. General questions designed to test such a knowledge and appreciation of literature as may be gained by fulfilling the requirements defined under *A. Reading*, above. The candidate will be required to submit a list of the books read in preparation for the examination, certified by the principal of the school in which he was prepared; but this list will not be made the basis of detailed questions.

b. A test on the books prescribed for study, which will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an apprecia-

tion of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

2. Greek (2 units)

a. **Grammar and Composition** (1 unit). The common forms, idioms, and constructions, and the general grammatical principles of Attic Greek prose. Translation into Greek of detached sentences and very easy continuous prose based upon the *Anabasis*.

b. **Xenophon and Sight Translation** (1 unit). The first three books of the *Anabasis*.

c. **Homer** (1 unit). The first three books of the *Iliad* (omitting II, 494-end) or an equivalent amount of the *Odyssey*, and the Homeric constructions, forms, and prosody.

3. Latin (4 units)

a. **Grammar and Composition** (1 unit). The inflections; the simpler rules for composition and derivation of words; syntax of cases and the verb; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive. Translation into easy Latin of detached sentences and very easy continuous prose based upon Caesar and Cicero.

b. **Caesar** (1 unit). Any four books of the *Gallic War*.

c. **Cicero** (1 unit). Four orations read slowly and carefully and two read more rapidly from the following list, or equivalents: The four orations against Catiline, Archias, The Manilian Law, Marcellus, Roscius, Milo, Sestius, Ligarius, the fourteenth Philippic.

d. **Vergil** (1 unit). Four books of the *Aeneid*, and so much prosody as relates to accent, versification in general, and dactylic hexameter. It is recommended that two additional books be read.

Equivalents in b, c, or d, will be accepted at the discretion of the head of the department.

Every student is required to use in the college class room the Roman Method of pronunciation, and is expected to have had practice in this method at school.

4. Modern Languages (2 units)

a. German (2 units). Two years' work is necessary to meet this requirement.

During the first year the work should comprise: 1. careful drill upon pronunciation; 2. the memorizing and frequent repetition of colloquial sentences; 3. drill upon the rudiments of grammar, that is, upon the inflection of the article, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs, and the more usual strong verbs; also upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order; 4. abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; 5. the reading of from 75 to 150 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson, the teacher giving the English, and in reproducing from memory sentences previously read.

During the second year the work should comprise: 1. the reading of from 150 to 250 pages of literature in the form of stories and plays; 2. accompanying practice, as before, in the translation into German of easy variations upon the matter read and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; 3. continued drill upon the rudiments of the grammar, with constant applications in the construction of sentences.

b. French (2 units). Two years' work is necessary to meet this requirement.

During the first year the course should include: 1. careful drill in pronunciation; 2. the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural nouns, the inflection of adjectives, participles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence and the elementary rules of syntax; 3. abundant easy

exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; 4. the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice of translating into French easy variations of the sentences read, the teacher giving the English, and in reproducing from memory sentences previously read; 5. writing French from dictation.

During the second year the work should comprise: 1. the reading of from 250 to 400 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches; 2. constant practice, as in the previous year, in translating into French easy variations upon the texts read; 3. frequent abstracts, sometimes oral and sometimes written, or portions of the text already read; 4. writing French from dictation; 5. continued drill upon the rudiments of grammar, with constant application in the construction of sentences; 6. mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

c. Spanish (2 units). Two years' work is necessary to meet this requirement.

During the first year the work should comprise: 1. careful drill in pronunciation; 2. the rudiments of grammar, including the conjugation of the regular and the more common irregular verbs, the inflection of nouns, adjectives, and pronouns, and the elementary rules of syntax; 3. exercises containing illustrations of the principles of grammar; 4. the careful reading and accurate rendering into good English of about 100 pages of easy prose and verse, with translation into Spanish of easy variations of the sentences read; 5. writing Spanish from dictation.

During the second year the work should comprise: 1. the reading of about 200 pages of prose and verse; 2. practice in translating Spanish into English, and English variations of the text into Spanish; 3. continued study of the elements of grammar and syntax; 4. mastery of all but the rare irregular verb

forms and of the simpler uses of the modes and tenses; 5. writing Spanish from dictation; 6. memorizing of easy short poems. The emphasis should be placed on careful, thorough work with much repetition rather than upon rapid reading.

5. Mathematics ($2\frac{1}{2}$ units)

a. **Algebra** ($1\frac{1}{2}$ units). The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions, ratio and proportion; linear equations, both numerical and literal, containing one or more unknown quantities; problems depending on linear equations; radicals, including the extraction of the square root of polynomials and of numbers; exponents, including the fractional and negative.

Simple cases of equations with one or more unknown quantities that can be solved by the methods of linear or quadratic equations.

Problems depending upon quadratic equations.

The binomial theorem for positive integral exponents.

The formulas for the n th term and the sum of the terms of arithmetic and geometric progressions, with applications.

b. **Plane Geometry** (1 unit). The usual theorems and constructions of good textbooks, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle.

The solution of numerous original exercises, including loci problems.

Application to the mensuration of lines and plane surfaces.

6. Science (1 unit)

The work in science may be offered in any of the departments named below, except that for admission to the B. S. course in Chemistry, and after 1922 to the pre-medical course, chemistry must be chosen. The figure in parenthesis shows the unit value:

- a. Physics.(I)
- b. Chemistry.(I)
- c. Biology.(I)
- d. Zoology.(I)
- e. Botany.(I)
- f. Physiography.(I)

In every instance the work expected is that outlined for the given subject in the reports of the College Entrance Examination Board and the Carnegie Foundation, or in the Syllabus of the New York State Education Department.

7. History (1 unit; 2 units)

a. **Greek History** ($\frac{1}{2}$ unit). In this study must be included the geography of ancient Greece.

b. **Roman History** ($\frac{1}{2}$ unit). In this study must be included the geography of the Roman Empire.

c. **History of the United States** (1 unit).

Elementary United States history will be accepted if the candidate presents in addition a year of history not otherwise required.

8. Electives ($1\frac{1}{2}$ units; $2\frac{1}{2}$ units; $3\frac{1}{2}$ units; $5\frac{1}{2}$ units)

In completing the requirements for admission to each course a fixed number of elective units in subjects not already taken from other groups must be offered from the list below.

In every instance the work expected is that outlined for the given subject in the reports of the College Entrance Examination Board and the Carnegie Foundation, or in the Syllabus of the New York State Education Department.

| | |
|---|----------------------|
| For admission to A. B. Course A..... | $\frac{1}{2}$ unit |
| For admission to A. B. Course B..... | $1\frac{1}{2}$ units |
| For admission to A. B. Course C..... | $5\frac{1}{2}$ units |
| For admission to A. B. Course D..... | $3\frac{1}{2}$ units |
| For admission to A. B. Course E..... | $1\frac{1}{2}$ units |
| For admission to B. S. Course in C. E..... | $5\frac{1}{2}$ units |
| For admission to B. S. Course in E. E..... | $5\frac{1}{2}$ units |
| For admission to B. S. Course in Chemistry..... | $5\frac{1}{2}$ units |
| For admission to Pre-Medical Course..... | $5\frac{1}{2}$ units |

The figure in parenthesis after each subject shows the unit value of that subject.

| | |
|---------------------------------|--------------------------------------|
| Greek: 1, 2, 3... (1, 2, 3) | Roman History (½) |
| Latin: 1, 2, 3, 4. (1, 2, 3, 4) | English History (1) |
| French: 1, 2, 3.. (1, 2, 3) | Mediaeval and Modern History.. (1) |
| German: 1, 2, 3. (1, 2, 3) | History of English Literature... (½) |
| Spanish: 1, 2, 3.. (1, 2, 3) | Solid Geometry (½) |
| Physics (1) | Advanced Algebra..... (½) |
| Chemistry (1) | Plane Trigonometry (½) |
| Physiology (½) | Spherical Trigonometry (½) |
| Biology (1) | Drawing (1) |
| Zoology (1) | Commercial Law (½) |
| Botany (1) | Commercial Geography (½) |
| Physiography (1) | Economics (½) |
| Greek History (½) | Civics (½) |
| Ancient History (1) | |

Entrance Examinations in 1922

Entrance examinations will be held at the college in June and in September, in accordance with the schedule given below. A fee of five dollars is required at the time of registration.

Only those who register at the appointed time will be admitted to the examinations of the following days.

Schedule of the June Examinations

Tuesday, June 13

8.30 A. M. Candidates register at the office of the secretary

| | | |
|---------------------|--------------|---------------------|
| English a | Page 36..... | 9 A. M. to 11 A. M. |
| English b | " 39..... | 11 A. M. " 1 P. M. |
| Science. | " 44..... | 2 P. M. " 4 P. M. |
| Mathematics a | " 44..... | 4 P. M. " 6 P. M. |

Wednesday, June 14

| | | |
|-------------------------|--------------|---------------------|
| Greek, Latin | Page 41..... | 9 A. M. to 11 A. M. |
| French, German, Spanish | " 42..... | 11 A. M. " 1 P. M. |
| History. | " 45..... | 2 P. M. " 4 P. M. |
| Mathematics b, c..... | " 44..... | 4 P. M. " 6 P. M. |

Schedule of the September Examinations

Thursday, September 14

8.30 A. M. Candidates register at the office of the secretary

| | | | |
|---------------------|--------------|---------------------|---------|
| English a | Page 36..... | 9 A. M. to 11 A. M. | |
| English b | " 39..... | 11 A. M. " | 1 P. M. |
| Science. | " 44..... | 2 P. M. " | 4 P. M. |
| Mathematics a | " 44..... | 4 P. M. " | 6 P. M. |

Friday, September 15

| | | | |
|-------------------------|--------------|---------------------|---------|
| Greek, Latin | Page 41..... | 9 A. M. to 11 A. M. | |
| French, German, Spanish | " 42..... | 11 A. M. " | 1 P. M. |
| History. | " 45..... | 2 P. M. " | 4 P. M. |
| Mathematics b, c..... | " 44..... | 4 P. M. " | 6 P. M. |

DEPARTMENTS OF INSTRUCTION

THE BIBLE

PROFESSOR ELLERY

The Bible. The object of this course is not to acquaint the student with books about the Bible, but with the contents of the Bible itself. The only textbook recommended and used in the classroom is the Bible. The course is divided into two parts covering the entire Bible, and each part is given in alternate years.

Part I

Genesis: The formation of a nation.

Exodus, Leviticus, Numbers: The migration of a nation.

Deuteronomy: Orations and songs of Moses.

Joshua, Judges, Ruth: A nation's transition to secular government.

First Samuel, Second Samuel, First Kings, Second Kings: A nation under theocratic and secular government.

Chronicles, Ezra, Nehemiah: The ecclesiastical history of a nation.

The Books of the Prophets.

Part II

Esther: A story of the exiled nation.

Job: A drama of the mystery of suffering.

The Psalms, Lamentations, The Song of Solomon: Bible poetry.

The Four Gospels, The Epistles, The Revelation.

Elective for juniors and seniors in the A. B. and B. S. courses.

Three hours weekly throughout the year.

Note: These courses are not offered in 1921-22.

BIOLOGY

ASSOCIATE PROFESSOR MAVOR, MR. IRISH

1. **General Biology.** This course deals during the first semester with zoology, and during the second semester with botany. The work of the first semester includes a study of the physiology, anatomy, histology and development of the frog as illustrative of a typical vertebrate. This is followed by a study of selected types showing the evolution of the animal kingdom and the

problems involved therein. The work in botany consists of an introductory study of the physiology and structure of a typical flowering plant, followed by a study of a series of types illustrating the problems of the evolution of the plant kingdom and the relation of plants to man, laboratory work, lectures and recitations.

Required of freshmen in the pre-medical course. Elective for junior in the A. B. course; four hours weekly throughout the year.

2. Comparative Anatomy of Vertebrates. This course consists of a series of lectures dealing with the comparative anatomy, physiology, and evolution of vertebrates, accompanied by laboratory work in the dissection of a type of each class.

Required of sophomores in the pre-medical course. Elective in connection with course 3 for seniors in the A. B. course who have had course 1. Four hours weekly during the first semester.

3. Embryology. This is an elementary course. The development of a vertebrate is traced from the egg to the adult. In the laboratory the development of the frog and the chick are studied. Particular attention is paid to the earlier stages in the frog and to the later stages in the chick.

Required of sophomores in the pre-medical course. Elective in connection with course 2 for seniors in the A. B. course who have had course 1. Four hours weekly during the second semester.

4. Microbiology. This is an elementary course dealing with the principles of bacteriology and protozoology. Lectures and laboratory work. Required of juniors in the B. S. in chemistry course. Three hours weekly during the first semester.

CHEMISTRY

PROFESSOR ELLERY, ASSISTANT PROFESSOR DARBY, MR. GREELEY,
MR. SCHATZEL

DR. LANGMUIR, DR. HULL, DR. DAVEY, DR. DUSHMAN

1. General Chemistry. The course includes an exhaustive study of the non-metals and their compounds, together with the fundamental laws and modern theories of chemistry, a special study of the common metals, and a brief introduction to organic

chemistry. Methods of instruction include recitations, written quizzes, illustrated lectures, and laboratory work. Laboratory practice in the first semester involves the preparation of some of the common elements and a study of the laws of chemical combination. This part of the work is strictly quantitative. The work of the second semester includes the simpler methods of qualitative analysis involving the recognition of single metals and acid radicals in solution.

Required of sophomores in the civil engineering and electrical engineering courses, and in the A. B. courses C. and D. Elective for juniors and seniors in the A. B. courses A, B, and E. Two recitations and one laboratory period weekly throughout the year.

1a. General Inorganic Chemistry. The course includes a study of the principles and theories of chemistry and of the principal non-metallic and metallic elements as in 1. It is the foundation for the more advanced work in chemistry given in medical colleges. The experiments performed in the laboratory are quantitative, requiring accurate measurements of weights and volumes. During the latter part of the semester problems in inorganic preparations are given.

Required of freshmen in the pre-medical course. Three recitations and two laboratory periods during the first semester.

1b. Advanced Inorganic Chemistry. The work of this course includes a review of the fundamental laws of the science, a study of the modern theories, and of the properties and the methods of preparation of the common non-metals and metals. This is followed by the theory and study of solutions, dissociation, ionization, the relation of various forms of energy to chemical change, chemical equilibrium, the periodic system and Moseley's atomic numbers, crystal structure, radio-activity, and the electronic hypothesis of matter. The applications of chemical principles in stoichiometry are studied by the use of many problems throughout the year.

Required of freshmen in the B. S. in chemistry course. Two hours weekly during the first semester.

2. Qualitative Analysis. On the experimental side this course

is intended to train the student in habits of careful and exact manipulation, while developing a facility in the rapid analysis of inorganic substances. The student is required to prepare matter for analysis, and to analyze complicated mixtures. On the theoretical side the following topics are studied: Ionization and its relation to conductivity, osmotic pressure and chemical activity; chemical equilibrium and the law of mass action; the colloidal condition; solubility product.

Required of freshmen in the B. S. in chemistry course. One laboratory period weekly during the second semester.

2a. Qualitative Analysis. This course is a study in the theory and practice of systematic inorganic analysis.

Required of freshmen in the pre-medical course. Three recitations and two laboratory periods during the second semester.

2b. Analytical Chemistry. The first part of this course comprises the study of the foundation theories of qualitative analysis and a practical application of them in the group reactions of the metals and non-metals. The object of this portion of the work is to develop a facility in the rapid qualitative determination of the components of ordinary inorganic substances. The second part of the course applies the principles of analytical chemistry to quantitative determinations. After practice is gained by certain gravimetric analyses, study is made of volumetric analysis, including alkalimetry, acidimetry, iodometry, and precipitation methods with standard solutions.

Elective for juniors in the A. B. courses C and D, and for seniors in the A. B. courses A, B, and E, who have had course 1. Three hours weekly throughout the year.

Note: This course will be offered first in 1922-1923.

3. Quantitative Analysis. The object of this course is to carry into the actual operations of exact measurements of weights and volumes the habits of carefulness and accuracy formed in course 2. The work begins with a careful calibration of weights and determination of the sensibility of the analytical balance. This is followed by the study of the preparation of pure salts by re-crystallization, by precipitation, by change of solvent, and

by double decomposition. Typical quantitative methods are then studied as follows: Determination of metals as oxid, as sulfate and sulfid, as phosphate, as chromate, and as chlorid; determination of the acids of the halogens, sulfur, and nitrogen; determination of carbonic, boric, and phosphoric acids. Following the study of these typical methods, the student is required to make a quantitative analysis of some alloys and minerals. The study of electrolytic apparatus and manipulation is then taken up, and the electrolytic determination of some metals completes the gravimetric portion of the course. The part of the course devoted to volumetric analysis includes the usual methods of acidimetry, oxidation and reduction, iodometry, and precipitation. Practical application of volumetric methods is made in analysis of iron, copper, and manganese ores, and of commercial substances such as bleaching powder, bisulfites, and certain alloys and soils.

Required of freshmen and sophomores in the B. S. in chemistry course. One laboratory period weekly during the second semester of freshman year and two laboratory periods during first semester of sophomore year.

3a. Quantitative Analysis. This course comprises problems in gravimetric and volumetric analysis designed to give familiarity with the principles, methods, and manipulations employed in quantitative chemical work.

Required of sophomores in the pre-medical course. Two recitations and two laboratory periods during the first semester.

4. Organic Chemistry. This course begins with a study of the saturated hydrocarbons, their isomerism and preparation and properties. This is followed by a study of the derivatives of the paraffines in this order: The halogen substitution products, the alcohols, the ethers, the aldehydes, the ketones, the fatty acids, esters, the amines, amids, and the carbohydrates. The work on the paraffines is followed by a study of the olefines and their derivatives, and the hydrocarbons of the acetylene series. Familiarity with these classes of organic compounds is essential to a clear understanding of the phenomenon of stereo-isomerism, which is taken up at this point. The second part of the theoretical instruction in this course is given to the study of the aromatic

compounds in the following order: Benzene and its homologues; the halogen derivatives; nitro-salts; amino-compounds; the diazo-salts; the sulphonic acids and derivatives; phenols and derivatives; naphthalene and its compounds; anthracene and its compounds; pyridine and quinidine; the vegetable alkaloids; uric acid and allied compounds; terpenes; dyes and their manufacturing processes. The requirements of the course in experimental work include a study of the preparation of typical organic compounds of both the paraffine and the aromatic groups. Emphasis is laid not only on the production of a pure organic compound, but also upon the efficiency of the method of preparation. The students are required to secure the highest possible yield in every reaction, and are urged to study improvements of methods with a view to increasing the yield.

Required of freshmen and sophomores in the B. S. in chemistry course. Two hours weekly during the second semester of freshman year and first semester of sophomore year and four hours weekly during the second semester of sophomore year.

4a. Organic Chemistry. This course comprises the preparation of typical organic substances, and a thorough study of the principles and theories of organic chemistry. In addition to the analysis of organic compounds, students in this course have opportunity to make molecular weight determinations by the vapor density method and the boiling and freezing point method. They also have opportunity to study the effects of electrolysis on typical organic compounds.

Elective for seniors in the A. B. courses C and D who have had courses 1 and 2b. Three laboratory periods weekly throughout the year.

Note: this course will be offered first in 1923-24.

4b. Organic Chemistry. This course comprises a study of the principal classes of carbon compounds, with emphasis upon the general types of organic reactions. Emphasis is laid upon compounds of biological importance. This course is the basis for later work in physiological chemistry. In the laboratory the work consists of the preparation of typical compounds.

Required of sophomores in the pre-medical course. Two recitations and two laboratory periods during the second semester.

5. **Physical Chemistry.** The aim of the course in physical chemistry is to give the student a thorough grasp of the basic principles which underlie all chemistry and to drill him in their use until they become valuable and easily handled tools. For this reason, a full third of the time devoted to classroom work is taken up with the working of problems. The problems are designed to show clearly the theoretical basis for the methods employed in their solution, and to show the limits within which such methods may be employed. Wherever possible, actual experimental data are used.

The classroom work starts with a review of the more elementary material, the simple gas laws, Van der Waal's equation, elementary kinetic theory, etc. This is followed by a consideration of osmotic pressure, vapor pressure lowering, and the various methods of determining molecular weights by boiling point, freezing point, vapor pressure lowering and osmotic pressure measurements. The importance of the Van't Hoff "i" and its bearing on the theory of dissociation follows, with a consideration of past and present theories of electrolytic conductance and dissociation. The first and second laws of thermodynamics are taken up in detail, and the balance of the work is based on thermodynamics. It includes thermochemistry, heats of reaction, solution and vaporization, specific heats of solids, liquids and gases, the Clausius equation, etc. Liquids and solutions are now considered again, this time from the thermodynamic standpoint, and the work covers partial pressures, fractional distillation, vapor pressure and boiling point changes, saturated vapors and concentrated solution. This leads to the general question of the phase rule, which is now taken up in some detail. The importance of chemical equilibrium is fully emphasized. It includes the law of mass action for gases, the Van't Hoff equation, the calculation of equilibria at various temperatures, chemical affinity or free energy, equilibrium in solution and in heterogeneous systems. The Nernst Heat Theorem is considered and its importance as a sometimes rough but valuable tool for many calculations pointed out. Colloids and catalysis are studied as well as reaction velocities and hydrolysis. The latter part of the course is devoted to electro chemistry, including the energy relations,

reversible and irreversible cells, potential measurements, over-voltage phenomena, gas electrodes, oxidation and reduction processes, concentration cells, polarization, etc.

The laboratory work covers the determination of molecular weights by boiling point or freezing point methods, or by both, the distribution of substances, solubilities, vapor pressures and transformation points, conductivity studies, including the determination of cell constants, conductance measurements and electrometric titrations. Transference measurements are made, and some time given to electromotive force studies, including standard cells, calomel electrodes, dropping electrodes, measurement of single electrode potentials, etc. Rates of reaction and equilibrium measurements are made.

Required of juniors in the B. S. in chemistry course. In 1922-23 four hours weekly during the first semester and six hours during the second semester. In 1921-22 the course is given to seniors in the B. S. in chemistry course six hours weekly throughout the year. Credit hours are divided between recitation and laboratory periods as the particular stage of the course reached at any time demands.

6. Research. Each senior in the B. S. in chemistry course is required to undertake a piece of research and to complete it in a manner satisfactory to his instructor. He is required to do all the necessary reading on the assigned problem, lay out his plan for doing the work and carry out his plans. The object is to give the student an idea of what research really means, to acquaint him with methods of securing information from chemical literature, and to give him training in experimental methods which the usual laboratory work cannot do.

For 1921-22 the following problems have been assigned:

A Study of the Electrolytic Reduction of meta Di Nitro Benzol

A Study of the Electrolytic Oxidation of Oxalic Acid.

The Rate of Solution of Pure Iron in Carbon Dioxide Solutions

The Corrosion of Iron and Steel in Solutions of Zinc Sulphate and Sodium Sulphate

The Action of Platinum Black on Acetic Acid

The Migration of Salts and the Properties of Wooden Diaphragms.

Required of seniors in the B. S. in chemistry course in 1922-23 nine hours weekly throughout the year. In 1921-22, the credit hours are three hours weekly.

7. **Lecture Courses.** There are given each year to the members of the junior and sophomore classes lecture courses on special topics by experts. For 1921-22 these courses are as follows:

Metals and their Alloys

Iron and Steel

Crystal Structure and the X-rays

Theoretical Chemistry

Theories of Atomic Structure.

These lectures are distributed through the year in such a way that they fit in with the scheme of instruction followed in the above list of courses. Conferences are held and examinations given on the material covered in the lectures.

Graduate Course

The degree of M. S. in Chemistry. The requirements for this degree in 1921-22 are as follows:

Minor: Thermodynamics. See page 69.

Major: The chemistry courses outlined below:

A. Advanced Physical Chemistry. The work of this course is founded on thermodynamics, but full use is made of the kinetic viewpoint in bringing out the facts. The following subjects are considered: specific heats, including the specific heats of solids, gases, saturated vapors and solids, and including the work of Einstein, Linderman, etc.; thermochemistry, systems subjected to constraint; isolated and isodynamic systems; chemical potentials, introducing the work of Gibbs; free energy and chemical affinity; the theory of solutions; the theoretical basis for the dissociation hypothesis and the modern view of dissociation phenomena, including the work of Ghosh and others; the theory of concentrated solutions; hydrolysis; common ion

phenomena, including the recent work of Kraus and others; the laws of chemical equilibrium; the Nernst Heat Theorem; catalysis, phase rule, etc. The treatment is mathematical throughout.

B. Advanced Electro-Chemistry. This is essentially a segregation of the electro-chemical material given under the head of physical chemistry. It includes the application of thermodynamics to electro-chemistry, the derivation of the Gibbs-Helmholtz equation for a system in which external forces are acting, and the use of this relation in the study of electromotive forces, potentials; the relation between electromotive forces and chemical equilibrium; concentration cells, etc. A careful study is made of the question of overvoltages and the modern theories thereof. Oxidation and reduction effects, particularly in the case of organic preparations will be considered, and some time will be devoted to such questions as the electrical conductance of metals, the Thompson effect, the Peltier effect, etc.

C. Journal Seminar. One evening a week is devoted to reports on and discussion of articles appearing in the journals. In general, these are articles in recent publications, but where necessary, less recent articles will be discussed, the original sources being used in every instance. Each student is given topics to report on, and these reports form the matter for discussion.

D. Physico-Chemical Problems. This involves the study, solution and discussion of a number of problems which cover the material outlined in the two courses above. It involves the derivation of the important relations and their use in solving problems in thermodynamics, specific heats, thermochemistry, chemical potentials, free energy, dissociation phenomena, common ion effect, the Nernst Heat Theorem, electrical potentials, chemical equilibrium, phase rule, overvoltage, etc.

E. Research. The problem assigned for 1921-22 is the Vapor Pressure of Zinc-Cadmium Alloys.

Examinations. Examinations for this degree are conducted as follows:

The examinations in the minor are those given regularly in that course.

The examination in the major is oral, and is held before a committee consisting of representatives of the department, a representative chosen by the faculty from the departments of physics, electrical engineering or mathematics and a representative from the research laboratory of the General Electric Company selected by the director of that laboratory.

CIVIL ENGINEERING

PROFESSOR MC KIBBEN, ASSOCIATE PROFESSOR TAYLOR, ASSISTANT
PROFESSOR SAYRE, MR. MATHEWS, MR. SCHAUFFLER
PROFESSOR BERG, ASSOCIATE PROFESSOR VEDDER, ASSISTANT PROFESSOR
GROVER, MR. SMITH, MR. SNELL

G.E.1. Engineering Drawing. This course commences with freehand drawing, which includes the subject of form, proportion and perspective; light and shade; the aesthetics of decorative and applied design; drawing from models; and thorough practice in lettering. The last part of the semester is devoted to mechanical drawing, including the study of the care and use of instruments, mechanical lettering, shading, patent office drawing, and isometric and oblique projections.

Required of freshmen in the civil engineering course, technical and administrative options, and in the electrical engineering course. One lecture and two drawing periods weekly during the first semester.

A good set of drawing instruments and other necessary drafting equipment are required for the mechanical drawing.

G.E.2. Engineering Drawing. This course continues the work in mechanical drawing commenced the first semester. Study is made of mechanical, civil, and architectural engineering drafting room conventions; rendering in color; orthographic projection of solids in the four quadrants; machine sketching; the development of working drawings; and blue printing.

Required of freshmen in the civil engineering course, technical and administrative options, and in the electrical engineering course. Two drawing periods weekly during the second semester.

G.E.3. Engineering Drawing. This course covers practically the same work as that given in G.E.1 and G.E.2, although less time is spent upon each part.

Required of freshmen in the B. S. in chemistry course. Two drawing periods weekly throughout the year.

A good set of drawing instruments and other necessary drafting equipment are required for the mechanical drawing.

G.E.4. Elementary Surveying. This course starts with mensuration of lines, surfaces, and solids, including the principles involved in direct and indirect measurements. This is the preparation for the major part of the course, which is a careful study of the elementary principles of surveying. Precision and error are made an important feature in connection with the use, manipulation, and adjustment of the engineer's transit, level, and chain. Field and plotting work accompany class room study.

Required of freshmen in the civil engineering course, technical and administrative options, and in the electrical engineering course. One recitation and two field or drawing periods weekly during the second semester.

G.E.5. Plane and Topographic Surveying. Summer Term. This course is a continuation of G.E.4 and consists of a study of the methods of plane surveying. Various methods of traversing, running profiles, and engineering surveying are studied. Computations include problems involving latitudes and departures, coordinates, areas, omitted measurements, error of closure, parting off land, earth work and boundaries; principles of stadia measurements and their applications; methods of locating contours; use of the plane table.

Field work and plotting are conducted along practical lines to illustrate the application of these principles.

Three hours' credit is given for satisfactory completion of this course.

Required of freshmen in the civil engineering course, technical and administrative options, and in the electrical engineering course, at the close of the freshmen year. One recitation and seven hours of field or office work daily for fifteen days.

G.E.6 and 8. Engineering Lectures. Lectures are given on topics pertaining to the training and qualifications of an engi-

neer and to the engineering profession; the history of science and engineering; the history of architecture; foundations for engineering structures, such as power stations, bridges, dams; development of water power and hydro-electric plants.

Required, G.E.6, of freshmen in the civil engineering course, technical and administrative options and in the electrical engineering course, two hours weekly during the first semester; G.E.8, of sophomores in the civil engineering course, technical and administrative options, and in the electrical engineering course, two hours weekly during the second semester.

G.E.7. Elementary Machine Design. A study of various mechanisms, such as cams, gears, screws, belting, used in machines, is made by means of drawing exercises.

Required of sophomores in the civil engineering course, technical and administrative options, and in the electrical engineering course. Two two-hour drawing periods weekly in the first semester.

C.E.9. Railway and Highway Engineering. This is a study of reconnaissance and location of railways and highways. It also includes railway curves, frogs and switches, turnouts, easements and earthwork; financing and administration of street and road building projects; types and materials of construction, the design, inspection and maintenance of highways and streets. Field practice and office computations accompany the recitations.

Required of juniors in the civil engineering course, technical option. Two recitations and one four-hour field or office period weekly during the first semester.

C.E.10. Machine Design. This course includes the principles underlying the design and construction of machines, including construction of centrodcs, the preparation of displacement, velocity, and acceleration diagrams.

Required of juniors in the civil engineering course, technical and administrative options. One recitation and two design periods weekly during the first semester.

C.E.11. Hydraulics. This course consists of a study of static and kinetic pressure of water, the flow of water in open chan-

nels and through pipes; centrifugal pumps, turbines and impulse wheels; elements of water power plants.

Required of juniors in the electrical engineering course. Two recitations and one laboratory or seminar period weekly during the first semester.

C.E.12. Hydraulics. This course covers the same topics as C.E.11 but more time is devoted to each topic.

Required of juniors in the civil engineering course, technical and administrative options. Three recitations and one laboratory or seminar period weekly during the second semester.

C.E.13. Theory of Elasticity. In this course are included the principles of mechanics in the solution of advanced problems in statics, kinetics, work, and mechanics of materials; general theory of elasticity.

Required of juniors in the civil engineering course, technical option. Three recitations or lectures weekly during the second semester.

C.E.14. Mechanics of Materials. This comprises a study in the strength of materials, including stresses and strains of all kinds of bodies subjected to various loadings. The course also takes up the production, preparation and physical properties of engineering materials.

Required of juniors in the civil engineering course, technical and administrative options. Four recitations weekly during the second semester.

C.E.15. Testing Laboratory. This course, given in conjunction with C.E.14, includes tests to determine the physical properties of engineering materials such as wood, steel, cement, concrete.

Required of juniors in the civil engineering course, technical and administrative options. One laboratory period of three hours weekly during the second semester.

C.E.16. Accounting. This course comprises a study of the elements of accounting, including the significance of double entry bookkeeping, assets and liabilities, good-will, analysis of financial statements, balance sheets, valuation, depreciation. It is not intended to train bookkeepers or accountants.

Required of juniors in the civil engineering course, technical and administrative options. Two lectures or recitations weekly during the second semester.

C.E.17. Railway Engineering. This is a course in the economic location, construction and operation of railways; railway legislation; operating conditions affecting location; electric traction; train and locomotive resistances; locomotive ratings; ruling and momentum grades; economy of grade reductions and of heavy train loads.

Required of seniors in the civil engineering course, technical option. Two lectures or recitations weekly during the first semester.

C.E.18. Structural Engineering. In this course is included the application of the principles of mechanics to the determination of stresses in the various forms of bridges and roof trusses; the principles of design of structural steel columns, trusses, beams and girders for railway and highway bridges, office and mill buildings.

Required of seniors in the civil engineering course, technical and administrative options. Four hours weekly during the first semester.

C.E.19. Structural Design. This course deals with the calculations of stresses in, and the design of, a plate girder railroad bridge, including all details; a shop drawing.

Required of seniors in the civil engineering course, technical and administrative options. Two two-hour drawing periods or seminars weekly during the first semester.

C.E.20. Business Law. This is a course in business law for engineers, including evidence; the law of contracts, torts, equity, real property, agency, sales, negotiable instruments; the engineer's legal relations.

Required of seniors in the civil engineering course, technical and administrative options. Elective for seniors in the electrical engineering course. Three recitations or lectures weekly during the first semester.

C.E.21. Hydraulic Engineering. Under this study are considered rainfall, run-off, storage of water, quality of water, puri-

fication of and distribution of water in connection with public water supplies. A complete design is made for a water supply system for a small city.

Required of seniors in the civil engineering course, technical option. Two recitations and one two-hour design period weekly during the first semester.

C.E.22. Finance and Banking. Under finance the following topics are studied: forms of business organization, corporations, owned and borrowed capital, securing capital, investment of capital funds, working capital, determination and disposition of net income, reorganization. Banking includes: history of banking, functions of the bank, national banks, trust companies, savings banks, loans and discounts, bank supervision, and the Federal Reserve system.

Required of seniors in the civil engineering course, technical and administrative options. Three lectures or recitations weekly during the first semester.

C.E.23. Heat Engineering. This course follows the thermodynamics of the junior year and includes: the study of heat, thermodynamics, properties of steam, calorimeters, combustion and fuels, boilers and accessories, stokers, economizers and superheaters, steam engines, testing of steam engines, valve gears, governors, and compound engines.

Required of seniors in the civil engineering course, technical and administrative options. Three recitations or lectures weekly during the first semester.

C.E.24. Heat Engineering. This course is a continuation of C.E.23 and includes the study of condensers, steam turbines, gas engines, pumps.

Required of seniors in the civil engineering course, technical and administrative options. Three recitations or lectures weekly during the second semester.

C.E.25. Reinforced Concrete. This course includes a study of the manufacture of cement; the physical properties of cements and concretes; the design and construction of reinforced concrete structures, such as buildings and bridges; theory of reinforced concrete design; and arches and retaining walls.

Required of seniors in the civil engineering course, technical option. Three lectures or recitations weekly during the second semester.

C.E.26. Advanced Structures. In this course is included the determination of stresses in continuous girders, draw and cantilever bridges, metallic arches; the theory of deflections and applications to indeterminate structures; construction and design of dams.

Required of seniors in the civil engineering course, technical and administrative options. Four lectures or recitations during the second semester.

C.E.27. Structural Design. This course consists of exercises in calculation of and designs for steel structures; graphic determination of stresses; design for a dam.

Required of seniors in the civil engineering course, technical option. One two-hour period weekly during the second semester.

C.E.28. Contracts and Specifications. In this course is included contract letting, the advertising for bids, information for bidders, the form of the contract, the bond, and specifications.

Required of seniors in the civil engineering course, technical and administrative options. Two lectures or recitations weekly during the second semester.

C.E.29. Sanitary Engineering. This subject includes the design and construction of sewerage systems; sewage disposal; and sanitation.

Required of seniors in the civil engineering course, technical options. Three lectures or recitations weekly during the second semester.

C.E.30. Business Administration. This course includes a study of the principles of industrial management; industrial and plant location; plant equipment, organization and management.

Required of seniors in the civil engineering course, technical and administrative options. Three lectures or recitations weekly during the second semester.

Graduate Course

The Degree of M. S. in C. E. This course of one year's resident graduate study, consisting of lectures, laboratory and research work, is open to graduates of the civil engineering course, technical or administrative option, of Union College or of any other institution of a standing recognized by the faculty. On its successful completion the degree of Master of Science in Civil Engineering is conferred.

ECONOMICS AND POLITICAL SCIENCE

ASSISTANT PROFESSOR DERRY

Economics

1. **Elements of Economics.** This is an introductory course dealing with the development, principles, and processes of modern economic production, distribution, exchange and consumption of wealth. Attention is also given to some of the practical problems growing out of our economic life.

Elective for juniors in the A. B. courses. Required of seniors in the B. S. in chemistry course. Three hours weekly throughout the year.

2. **Elements of Economics.** This course is the same as course 1, except that special attention is given to correlating economic principles with engineering.

Required of seniors in the electrical engineering course and of juniors in the civil engineering course. Technical and administrative options. Three hours weekly during the first semester.

Given in 1921-22 by Professor Kellogg.

3. **Banking.** The history and theory of banking are studied in this course. Special attention is given to modern banking practice in this country and to the Federal Reserve System.

Elective for seniors in the A. B. courses. Three hours weekly during the first semester.

4. **Public Finance.** In this course the theory and practice of public financing are considered with particular reference to problems of taxation and the budget system.

Elective for seniors in the A. B. course. Three hours weekly during the second semester.

5. Statistical Methods. After a preliminary study of the value of statistics as an aid to scientific investigation, the principal methods of statistical inquiry are examined.

Elective for seniors in the A. B. courses. Three hours weekly during the first semester. Alternate with course 5.

6. Accounting. After a brief introduction to the theory and practice of keeping business records, the principles of accounting are considered in detail. Special attention is given to cost-accounting and financial statements and reports.

Elective for seniors in the A. B. courses. Three hours weekly during the second semester. Alternate with course 6.

Note: Courses 3 to 6 are open only to such students as have completed Course 1 or Course 2.

Political Science

1. Elements of Political Science. This is an introductory course in the theory and nature of political institutions in general, and those of the United States in particular.

Elective for juniors and seniors in the A. B. courses. Three hours weekly during the first semester.

2. United States Government. In this course the organization and operation of the Federal Government are considered, with particular reference to social and economic legislation.

Elective for juniors and seniors in the A. B. courses. Three hours weekly during the second semester.

3. State Government. In this course the organization and operation of the governments of the states are considered, with particular reference to the state of New York.

Elective for seniors in the A. B. courses. Three hours weekly during the first semester.

4. Municipal Government. In this course the government and administration of the modern American city are considered. Special attention is given to the problems of cities in the state of New York.

Elective for seniors in the A. B. courses. Three hours weekly during the second semester.

ELECTRICAL ENGINEERING

PROFESSOR BERG, ASSOCIATE PROFESSOR VEDDER, ASSISTANT PROFESSOR GROVER, MR. SMITH, MR. SNELL

PROFESSOR MC KIBBEN, ASSOCIATE PROFESSOR TAYLOR, ASSISTANT PROFESSOR SAYRE, MR. SCHAUFFLER, MR. MATHEWS

G.E.1. Engineering Drawing. This course commences with freehand drawing, which includes the subject of form, proportion and perspective; light and shade; the aesthetics of decorative and applied design; drawing from models; and thorough practice in lettering. The last part of the semester is devoted to mechanical drawing, including the study of the care and use of instruments, mechanical lettering, shading, patent office drawing, and isometric and oblique projections.

Required of freshmen in the civil engineering course, technical and administrative options, and in the electrical engineering course. One lecture and two drawing periods weekly during the first semester.

A good set of drawing instruments and other necessary drafting equipment are required for the mechanical drawing.

G.E.2. Engineering Drawing. This course continues the work in mechanical drawing commenced the first semester. Study is made of mechanical, civil, and architectural engineering drafting room conventions; rendering in color; orthographic projection of solids in the four quadrants; machine sketching; the development of working drawings; and blue printing.

Required of freshmen in the civil engineering course, technical and administrative options, and in the electrical engineering course. Two drawing periods weekly during the second semester.

G.E.3. Engineering Drawing. This course covers practically the same work as that given in G.E.1 and G.E.2, although less time is spent upon each part.

Required of freshmen in the B. S. in chemistry course. Two drawing periods weekly throughout the year.

A good set of drawing instruments and other necessary drafting equipment are required for the mechanical drawing.

G.E.4. Elementary Surveying. This course starts with mensuration of lines, surfaces, and solids, including the principles involved in direct and indirect measurements. This is the preparation for the major part of the course, which is a careful study of the elementary principles of surveying. Precision and error are made an important feature in connection with the use, manipulation, and adjustment of the engineer's transit, level, and chain. Field and plotting work accompany class room study.

Required of freshmen in the civil engineering course, technical and administrative options, and in the electrical engineering course. One recitation and two field or drawing periods weekly during the second semester.

G.E.5. Plane and Topographic Surveying. Summer Term. This course is a continuation of G.E.4 and consists of a study of the methods of plane surveying. Various methods of traversing, running profiles and engineering surveying are studied. Computations include problems involving latitudes and departures, coordinates, areas, omitted measurements, error of closure, parting off land, earth work and boundaries; principles of stadia measurements and their applications; methods of locating contours; use of the plane table.

Field work and plotting are conducted along practical lines to illustrate the application of these principles.

Three hours' credit is given for satisfactory completion of this course.

Required of freshmen in the civil engineering course, technical and administrative options, and in the electrical engineering course, at the close of the freshman year. One recitation and seven hours of field or office work daily for fifteen days.

G.E.6 and 8. Engineering Lectures. Lectures are given on topics pertaining to the training and qualifications of an engineer and to the engineering profession; the history of science and engineering; the history of architecture; foundations for engineering structures, such as power stations, bridges, dams; development of water power and hydro-electric plants.

Required, G.E.6, of freshmen in the civil engineering course, technical and administrative options, and in the electrical engi-

neering course, two hours weekly during the first semester; G.E.8, of sophomores in the civil engineering course, technical and administrative options, and in the electrical engineering course, two hours weekly during the second semester.

G.E.7. Elementary Machine Design. A study of various mechanisms, such as cams, gears, screws, belting, used in machines is made by means of drawing exercises.

Required of sophomores in the civil engineering course, technical and administrative options, and in the electrical engineering course. Two two-hour drawing periods weekly in the first semester.

M.E.1. Advanced Mechanics. This course takes up the principles of mechanics from the engineering point of view. The principles of elementary mechanics are extended to three dimensions. The topics treated include: Statics, dynamics of a particle, rigid dynamics, moments of inertia, work, energy, friction, etc.

Required of juniors in the civil engineering, the electrical engineering, and the B. S. in chemistry courses. Four hours weekly during the first semester.

M.E.2. Advanced Mechanics. This course includes structures, strengths of material, and hydraulics.

Required of juniors in the electrical engineering and B. S. in chemistry courses. Five hours weekly during the second semester.

M.E.3. Thermodynamics. In this course the fundamental principles of thermodynamics are developed along with the mathematics necessary. The mechanical properties of perfect gases are treated, together with gas engine cycles, air-refrigeration, etc.

Required of seniors in the electrical engineering course. Three hours weekly during the first semester.

M.E.4. Thermodynamics. The fundamental principles of thermodynamics are applied to saturated and superheated steam, ammonia, and other vapors. The principles of the steam turbine, reciprocating, and gas engine are developed, and in this connection special study is made of the flow of fluids.

Required of seniors in the electrical engineering course. Three hours weekly during the second semester.

M.E.6. Thermodynamics. For description see M.E.3.

Required of juniors in the civil engineering courses. Two hours weekly during the second semester.

E.E.1. Elements of Electricity, Magnetism, and Theory of Direct Current Machines. This is an elementary course and is based on physics and mathematics.

Required of juniors in the electrical engineering course. Three hours weekly during the first semester.

E.E.2. Principles of Alternating Currents. This course includes the representation of alternating current waves and a review of the theory of complex numbers.

Required of juniors in the electrical engineering course. Three hours weekly during the second semester.

E.E.3. Theory of Alternating Current Machines. This course deals with the transformer and the alternator.

Required of seniors in the electrical engineering course. Three hours weekly during the first semester.

E.E.4. Theory of Alternating Current Machines. Continued. This course deals with the synchronous motor, induction motor, rotary converter, alternating current commutator motors, and simple transient phenomena. Problems of illumination and power plant economics.

Required of seniors in the electrical engineering course. Three hours weekly during the second semester.

E.E.5 and E.E.6. Elements of Electricity, Direct Current Machines, Alternating Current Machines. These are courses combining recitations and laboratory work. They cover in a non-mathematical way that part of electrical engineering which is given in E.E.1 and E.E.2.

Required of juniors in the civil engineering course. Three hours weekly throughout the year.

E.E.7 and E.E.8. Alternating Current Machines. These are courses combining recitations and laboratory work. They cover in a non-mathematical way that part of electrical engineering which is given in E.E.3 and E.E.4.

Required of seniors in the civil engineering course. Three hours weekly throughout the year.

E.E.13. Seminar. This is a course intended to bring the student in touch with phases of electrical engineering which do not enter entirely into the work of the other courses. It includes lectures by members of the department, the presentation and discussion of papers by the students themselves, and local trips of inspection to the works of the General Electric Company.

Required of seniors in the electrical engineering course. One hour weekly during the first semester.

E.E.14. Seminar. This course is a continuation of E.E.13.

Required of seniors in the electrical engineering course. One hour weekly during the second semester.

E.E.21. Junior Electrical Laboratory. This is a course in laboratory work in which studies and measurements of elementary circuits are carried on. It deals also with more advanced direct current measurements and the tests of direct current generators and motors.

Required of juniors in the electrical engineering course. Four hours weekly during the first semester.

E.E.22. Junior Electrical Laboratory. This is a course in laboratory work dealing with more advanced direct current measurements and the study of elementary alternating current circuits.

Required of juniors in the electrical engineering course. Three hours weekly during the second semester.

E.E.23. Senior Electrical Laboratory. This is a course in laboratory work dealing with alternating current circuits and apparatus, especially the transformer and alternator.

Required of seniors in the electrical engineering course. Four hours weekly during the first semester.

E.E.24. Senior Electrical Laboratory. This is a course in laboratory work dealing largely with synchronous and induction motors and the synchronous converter.

Required of seniors in the electrical engineering course. Four hours weekly during the second semester.

E.E.34. Electrical Machine Design. This is a course in the designing of electrical apparatus, particularly the transformer, generator, and the induction motor.

Required of seniors in the electrical engineering course. Three hours weekly during the second semester.

Literary Essay. A literary essay on a subject determined by the department of English is prescribed during the first semester of the junior and senior years.

Special Lectures. During the year a few lectures on highly specialized subjects are given by prominent engineers. These lectures are open to juniors, seniors and graduate students, and attendance is optional.

Inspection Trips. It is desirable that each student in the electrical engineering courses participate during his college life in extended trips of inspection of engineering activities. Such trips are, therefore, arranged at a low cost to each man and vary from year to year. It is the policy of the department to continue to arrange such trips and to conduct them when sufficiently representative groups of men can attend.

Graduate Courses

The Degree of M. S. in E. E. To students desiring to continue their electrical studies a short time beyond the four-year course, a graduate course of one year is offered in which, besides instruction in higher branches of electrical engineering, advanced mathematics and physics, there is occasion to carry out original investigations in electrical engineering practice on subjects closely connected with the most recent advance of electrical engineering. This course leads to the degree of Master of Science in Electrical Engineering, and is open to graduates of Union College or of other institutions approved by the faculty. The work must be done in residence, but the lectures are given at such hours as frequently permit students and young engineers of the General Electric Company to attend.

Credit for the work required in candidacy for the master's degree may be given to students who combine work with the General Electric Com-

pany and work at the college. When the work is divided in this way two years will be required for its completion. Before the degree is awarded the candidate must present an acceptable thesis describing original research in electrical science. The thesis may be accepted at any time within five years of the completion of the work in course.

The following courses in electrical engineering are given:

E.E.101. A course dealing with electric transient phenomena and with problems in electro-statics

E.E.102. A course which supplements E.E.101 and covers experimental work of an advanced character

The following courses in mechanical engineering are offered:

M.E.101. A course of lectures on hydrodynamics

M.E.102. A course of lectures on elasticity

M.E.103. A course of lectures on heat conduction

The Degree of Ph. D. The degree of Doctor of Philosophy is not given on the completion of a certain amount of work or the study of stated subjects for a definite period of time, but is intended to be a mark of breadth of training and high attainment. It is conferred upon the candidate who satisfactorily fulfills the following conditions:

1. A minimum of three full years of graduate work in residence, two of which must be passed at Union College, is necessary.

2. The major subject of study must be electrical science.

3. Two minor subjects of study must be pursued: the first must be mathematics, or physics, or chemistry; the second must be philosophy.

4. At the completion of the course, and two months before the conferring of the degree, a suitable thesis must be presented to the head of the electrical engineering department, representing original work and indicating strength and ability in independent investigation.

5. Fifty printed and bound copies of the thesis must be deposited in the college library before the successful candidate may receive the diploma for his degree. The degree may be conferred, however, before such copies are deposited, upon the presentation

to the treasurer of proper security for their provision. In this case, a bound typewritten copy must be placed in the library previous to the conferring of the degree.

Students engaged in research work at the laboratories of the General Electric Company, under the direction of the head of the department of electrical engineering at the college, not devoting their whole time to the work of the course, may be given half time credit for work satisfactorily completed at the college. During the last year the candidate for the degree of Doctor of Philosophy must, however, devote his entire time to work at the college.

THE ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HALE, ASSOCIATE PROFESSOR CHASE, MR. OAKES,
MR. GOODCHILD, MR. CLINE

1. **English Composition.** The chief object of this course is to train the student to use the English language clearly, correctly, and effectively. To this end, a considerable amount of theme-writing and frequent personal conferences with the instructor are required. Once a week throughout the first semester the class meets in large groups (of from fifty to one hundred) to listen to a half hour's talk on some subject of general interest and to write a report of what was said. At the two other meetings of the week, in small classes, instruction is given in the principles of composition, word-study, letter-writing, and so forth. In 1921-22 Young's Freshman English and Woolley's Handbook of Composition are used as text-books. Some outside reading is also assigned.

In the second semester the amount of reading is increased to four or five books of considerable length, which are the subjects of class discussions and of written reports. The aim is to foster an intelligent interest in good literature, while continuing the training in the art of expression. Books selected for 1922 are Thoreau's *Walden*, Palgrave's *Golden Treasury*, Thackeray's *Pendennis*, and Stevenson's *Essays*.

Required of freshmen in the A. B. courses, the engineering courses, and the pre-medical course. Three hours weekly throughout the year.

2. **Introduction to English Literature.** This is a course of general reading aiming principally to acquaint the student with

some of the masterpieces of English literature. It is intended also to give training in the habit of careful reading and to furnish something of an historical background for more advanced study. In the first semester six plays of Shakespeare are studied, and Neilson and Thorndike's *Facts About Shakespeare* is used for reference and additional information. In the second semester the subject is the literature of the eighteenth century, and the reading consists of five or six of the important prose works of the period.

Required of sophomores in the A. B. and pre-medical courses; three hours weekly throughout the year.

3. Introduction to English Literature. The first semester's reading is in nineteenth century essays dealing with science, art, literature, and politics, the chief aim being to stimulate reflection and discussion on these subjects and to present to the student certain significant contributions to modern thought. In the second semester the subject is Shakespeare, and the work is similar to that of the first semester of course 2.

Required of sophomores in the civil and electrical engineering courses; two hours weekly throughout the year.

English 4. English Literature of the Nineteenth Century. This course offers a view of the life and thought of the period as represented by certain leading poets and prose-writers. In the first semester the subject is the Romantic Movement (1798-1832), studied in the poetry of Wordsworth, Coleridge, Byron, Scott, Shelley, and Keats. The historical survey is followed by a discussion of some of the fundamentals of poetic theory, presented in W. A. Neilson's *Essentials of Poetry*. The work of the second semester is in the Victorian period (1832-92) and includes in 1921-2 selections from the poetry of Tennyson, Browning, and Arnold; Carlyle's *Past and Present*; Mill's *On Liberty*; and Gates's *Selections from Arnold's Prose*.

Elective for juniors in the A. B. courses. Three hours weekly throughout the year.

5. American Literature. The course follows rather definitely the book of texts used, *Century Readings in American literature*,

with the addition of lectures and illustrative material from the library.

Elective for juniors in the A. B. courses. Three hours weekly throughout the year.

7. Modern English Literature. A study of the English and American literature of the last half century: its object is to give the student an idea of modern points of view. In 1920-1921 the course deals with fiction, the drama, and poetry.

Elective for seniors in the A. B. courses. Three hours weekly throughout the year.

8. Early English Literature. The Canterbury Tales are read and as much of Chaucer's other works as time permits. There is a certain amount of linguistic study, which is necessary for an intelligent reading of the text; but the end in view is an understanding of Chaucer's literary skill and his relations to the age in which he lived.

Elective for seniors in the A. B. courses. Three hours weekly throughout the year.

9. The English Essay and Advanced Composition. The purpose of this course is two-fold: first, to outline the history of the English essay from its origin in earlier types; and second, to develop ability in writing by the study and imitation of the several styles met with, and by an understanding of the ideas which produced them. About half the time will be devoted to writing and the discussion of the results. In the first semester, after a brief treatment of Elizabethan prose, the class will study Cotton's Montaigno, Bacon, Browne, and others of the seventeenth century; and conspicuous essayists from Dryden to Johnson. The second semester will begin with the nineteenth century essays of Lamb, Hazlitt, and their contemporaries and continue to the present-day group.

Elective for juniors and seniors in the A. B. courses. Three hours weekly throughout the year.

Honor Course. Students who desire to be candidates for special honors should consult the head of the department early in the second semester of junior year.

GEOLOGY

PROFESSOR STOLLER

1. **General Science.** The purpose of this course is to give the student a knowledge of the more general phenomena of nature and training in the methods of scientific study. The topics are taken up in such order as to secure continuity and a logical development of the course. The work begins with the study of the weather and its causes (meteorology). The effects of the daily occurring change in nature in building up the exterior of the earth are then considered (physical geography and structural geology). This is followed by the study of the history of the earth and its inhabitants (historical geology and evolution). The study of prehistoric man, as based on geologic evidence leads to the final topic of the course—man and his place in nature (anthropology).

Required of freshmen in the A. B. courses C and D. Three hours weekly throughout the year.

2. **General Science.** This work follows the line of treatment of the preceding course but with some variation of the topics and with more attention given to the interpretative side of geologic and biologic science. The topics considered are, in order, meteorology, dynamic geology, historical geology and evolution, anthropology, genetics, and eugenics.

Optional with mathematics for sophomores in the A. B. courses. Three hours weekly throughout the year.

3. **General Geology.** This course is of a somewhat advanced character and includes laboratory work in mineralogy and lithology, and the interpretation of topographic and geologic maps. A number of field trips are made and the geology of the New York State formations, especially as represented in the region around Schenectady, is studied somewhat in detail.

Elective for juniors and seniors in the A. B. courses. Three hours weekly throughout the year.

4. **Engineering Geology.** In this course, after an introductory study of common minerals and rocks and the elements of structural geology, the work is related to the kinds and modes of

occurrence of economic materials, as building stones, coal, oil, gas, and mineral ores.

Required of juniors in the civil engineering courses; three hours weekly during the first semester. Optional with mathematics for seniors in the B. S. in chemistry course. Three hours weekly throughout the year.

THE GREEK LANGUAGE AND LITERATURE

DR. COFFIN

1a. Plato: Apology and Crito. **Homer:** Odyssey, selections. One Greek drama.

Required of freshmen in the A. B. course A; elective for juniors in the A. B. course B. Three hours weekly throughout the year.

1b. The Elements of Greek. Beginners' course. Greek Reader, semantics, the English vocabulary.

Required of freshmen in the A. B. course B; elective for juniors and seniors in the A. B. courses C, D, E. Three hours weekly throughout the year.

2a. Demosthenes: De Corona. Selections from **Thucydides** and **Herodotus**.

Required of sophomores in A. B. course A; elective for seniors in A. B. course B. Three hours weekly throughout the year.

2b. Xenophon: Selections from the Anabasis. **Homer:** Iliad, books I to III. Selected fables and sketches illustrative of Greek life and thought.

Required of sophomores in the A. B. course B. Three hours weekly throughout the year.

3. The Greek Drama. Selected plays of **Aeschylus**, **Sophocles**, **Euripides**, and **Aristophanes**. Lectures on the Greek theatre.

Elective for juniors in A. B. course A. Three hours weekly throughout the year.

4. Plato: Phaedo and Republic. **Aristotle:** The Nicomachean Ethics.

Elective for seniors in the A. B. course A. Three hours weekly throughout the year.

For special excellence in this course honors in Greek are awarded.

5. History of Greek Literature from Homer to Theocritus. General course, conducted by lectures and discussions, with outside reading in translation of the authors considered. No knowledge of Greek required.

Optional with History of Philosophy and Mathematics for sophomores in A. B. courses C, D, E. Three hours weekly throughout the year.

HISTORY

ASSISTANT PROFESSOR JONES, ASSISTANT PROFESSOR WALDRON

1. Medieval and Modern History. The course begins with a brief study of the Roman Empire and the contribution of the ancient world to modern civilization. Attention is given to events which have had permanent influence upon the historical development of Europe, and to institutions of enduring importance; among these may be named the medieval church, the feudal institutions, the French monarchy, and the English constitution. The course is designed to form a foundation of historical knowledge which may serve as a preparation for any further study, and to give to the student some acquaintance with methods of historical study and the use of authorities and sources.

Required of freshmen in the A. B. courses C, D, E. Three hours weekly throughout the year.

2. Medieval and Modern History. The course begins with a brief study of the Roman Empire and the contribution of the ancient world to modern civilization. Attention is given to events which have had permanent influence upon the historical development of Europe, and to institutions of enduring importance; among these may be named the medieval church, the feudal institutions, the French monarchy, and the English constitution. The course is designed to form a foundation of historical knowledge which may serve as a preparation for any further study, and to give to the student some acquaintance with methods of historical study and the use of authorities and sources.

Required of sophomores in the A. B. courses C, D, E, and of juniors in the civil engineering course, administrative option. Three hours weekly throughout the year.

3. **American History.** A study is made of the period of American discovery and exploration and of the colonial period. The main part of the work, however, begins with an examination of the causes of the American Revolution. The course is guided by text-books and lectures, and much work is done in the library among the sources and authorities.

Elective for seniors and juniors in A. B. courses, three hours weekly throughout the year; required of sophomores in the civil engineering, electrical engineering and B. S. in chemistry courses. Two hours weekly throughout the year.

4. **Modern European History.** This course briefly considers the causes, ideas and progress of the French Revolution and the reconstruction of European politics and society produced by the revolutionary and Napoleonic wars. Attention is then directed to the development of the spirit of nationality, especially in Italy and Germany, and a careful study is made of the political, economic and social progress of Great Britain and the continental states. The course is designed to give a clear understanding of the historical processes by which a new Europe was created in the nineteenth century, and the way prepared for the great catastrophe of the twentieth century.

Elective for juniors and seniors in the A. B. courses. Three hours weekly throughout the year.

5. **English History.** A general survey of the history of England with emphasis on the rise and growth of the Anglo-Saxon system of self-government and the formation of the British Empire of today.

The course is designed to acquaint the student with the methods of historical study and includes a certain amount of collateral reading.

Elective for juniors in the A. B. courses. Three hours weekly throughout the year.

Not given in 1921-1922.

6. **History of the World War.** This course deals with the remote and proximate causes of the world war of 1914-1918:

theories of statecraft, economic rivalries, territorial ambitions, and military alliances among the great European powers. Emphasis is laid on the diplomatic phases of the war, on the participation of the United States, the work of the Peace Conference and the problems of international reconstruction.

Elective for seniors in the A. B. courses. Three hours weekly throughout the year.

Given in 1921-22 by Professor Derry.

7. Honor Course. This course consists of a discussion of the principles of historical criticism, together with a study of the principal English and American historians. Essays and a thesis are required.

Open to seniors who have complied with the requirements for special honors. Three hours weekly throughout the year.

HYGIENE AND PHYSICAL TRAINING

DR. PEARSON, MR. MURPHY

Lectures in hygiene, including a brief course in first aid, are given to all students twice weekly throughout the freshman year.

A physical examination of new students is made at the beginning of the year and corrective exercises are prescribed for the remedy of physical defects. Charts of the physical measurements showing the comparison of the individual with the normal development and hand books containing much valuable hygienic data are furnished upon payment of a small fee. All candidates for college teams are required to pass a satisfactory physical examination before they are allowed to compete in athletic contests.

It is the policy of the college to influence the entire student body to take an active part in athletic sports and gymnastics and not to cater to the exceptional athlete to the exclusion of those who are physically less perfectly equipped.

THE LATIN LANGUAGE AND LITERATURE

PROFESSOR KELLOGG

1. Livy: Selections from Books I, XXI and XXII. Roman history. **Tacitus:** Agricola and Germania. **Cicero:** De Senectute or De Amicitia or Selected Letters. Latin composition.

The work of the first year includes a thorough review of forms

and syntax through oral and written prose composition and sight reading. Selections from the three great masters of Roman prose are made the basis for grammatical and literary analysis and interpretation, and also, through lectures and assigned reading, for the study of Roman history through the reign of Trajan.

Required of freshmen in the A. B. courses A, B, E. Four hours weekly throughout the year.

2. Selections from Latin Poetry. Terence: *Adelphoe*. Plautus: *Menaechmi* or an equivalent. Horace: Selected Odes and Epodes. Catullus: Selected poems.

Through lectures on ancient comedy and lyric, and by collateral reading, the student is made acquainted with the history of Roman literature under the Republic and the Empire. The grammatical analysis aims to make familiar the chief characteristics of early and colloquial Latin, and the general economy of poetic diction. The literary interpretation centers chiefly around the influence of Greek life and thought on Roman literature, and the national and personal elements in Latin poetry.

Required of sophomores in the A. B. courses A, B, E. Three hours weekly throughout the year.

3. Horace (Satires and Epistles) and Juvenal. Pliny the Younger (Letters), or Martial (Epigrams) or Petronius (Trimalchio's Dinner).

This course, through lectures and assigned reading, continues the history of Roman literature under the Empire. A brief introduction to Roman archaeology (with special study of the Forum Romanum) is given and, in connection with the Pliny, an outline of the private life of the Romans.

Students able to read French or German may receive special assignments under the direction of the department.

Elective for juniors in the A. B. courses A, B, E. Three hours weekly throughout the year.

4. Lucretius: Books I, III, V and Selections, with lectures on didactic poetry, the atomic theory, and the philosophic system of Epicurus. During one semester Cicero, *De Officiis*, is read as the basis for a study of ancient Ethics.

As this course is not only for those who elect to study Roman

life and literature but also for those who may desire to use Latin in teaching or as an instrument in later research work, special assignments may be given from authors or inscriptions for practice in editing, or the writing of history from the sources.

Elective for seniors in the A. B. courses A, B, E. Three hours weekly throughout the year.

5. Roman Law. When a sufficient number of seniors electing course 4 desire it, one or both semesters may be devoted to an introduction to Roman Law, based on the Institutes of Justinian, Robinson's Selections from Roman Law, and Morey's Outlines of Roman Law.

Honors. Candidates for honors in Latin must have taken all the courses offered by the department, must present a meritorious thesis, and comply with all the general regulations established for final honors.

In general, subsidiary reading is recommended. Equivalents may be substituted in the elective programme at any time, and the order of the subjects as given above may be altered in any one of the four years at the discretion of the head of the department.

MATHEMATICS

PROFESSOR GARIS, ASSOCIATE PROFESSOR ROWLAND, ASSISTANT PROFESSOR SNYDER, MR. MALE, MR. DE RONDE, MR. WARNER,
MR. BENNETT

1. Freshman Mathematics. This course includes solid geometry, advanced algebra, trigonometry and analytic geometry.

Required of freshmen in the B. S. in chemistry and in the engineering courses. Six hours weekly throughout the year.

1a. Freshman Mathematics. This course includes solid geometry, advanced algebra and trigonometry.

Required of freshmen in the A. B. and pre-medical courses. Four hours weekly throughout the year.

1b. Analytic Geometry. This course includes plane and solid analytical geometry and the more important higher plane curves.

Optional for sophomores in the A. B. courses. Three hours weekly throughout the year.

2. Differential and Integral Calculus. This course includes drill in differentiation and integration; the application of derivatives to curves; maxima and minima; the development of series; problems involving rates, curvature, surfaces and volumes; and the application of calculus to problems in mechanics and physics.

Required of sophomores in the civil engineering, electrical engineering and B. S. in chemistry courses. Elective for juniors in the A. B. courses. Five hours weekly throughout the year.

3. Differential Equations. The greater part of this course is given to the treatment of ordinary differential equations and their applications to geometry, electricity, physics, and mechanics. A review of the calculus, especially methods of integration, is required.

Required of juniors in the electrical engineering and B. S. in chemistry courses. Elective for seniors in the A. B. courses who have had course 2. Three hours weekly throughout the year.

4. Advanced Calculus. The subject matter of this course varies from year to year. At present the work is based on Wilson's Advanced Calculus.

Elective for seniors in the electrical engineering and the B. S. in chemistry courses. Three hours weekly throughout the year.

5. Graduate Course. The subject matter of this course varies from year to year. Sufficient ground is covered in three years to constitute a minor in mathematics in the requirements for the degree of Doctor of Philosophy. The two courses comprise: Infinite series and definite integrals and functions defined thereby, calculus of variations, vector analysis, functions of real and complex variables, elliptic functions and integrals, partial differential equations, Fourier series, expansion in terms of functions of Legendre, Laplace, Bessel, Lamé. The mathematical theory of electricity and magnetism is treated in considerable detail.

Three hours weekly throughout the year.

MECHANICS AND PHYSICS**Mechanics**

PROFESSOR OPDYKE

1. **Elementary Mechanics.** This course requires a knowledge of the foundation principles of mechanics, and applies the elements of calculus to the development of theory and to the solution of problems. The course is designed for technical students. It follows the first semester of physics, and is continued in the junior year by the applied mechanics of the engineering department.

Required of sophomores in the civil, electrical, and B. S. in chemistry courses. Two hours weekly throughout the second semester.

2. **Mechanics and Astronomy.** This course is intended for the general student and is broader and more analytical than mechanics 1. The calculus is used throughout, and emphasis is laid on the general physical aspects of the subject.

Elective for juniors and seniors in the A. B. courses who have had or are electing mathematics 2a. Three hours weekly throughout the year.

3. **Advanced Mechanics.** This course requires a knowledge of differential equations and is a continuation of mechanics 2. The purpose of the course is to make a more complete study of certain parts of the subject from a mathematical and physical standpoint, particularly of certain of the mechanical and physical problems arising in the fundamental measurement of electrical quantities.

Elective for seniors in the A. B. courses who have had mathematics 3, physics 1, and mechanics 2. Three hours weekly throughout the year.

Physics

PROFESSOR WOLD, VISITING PROFESSOR RICHTMYER, ASSOCIATE

PROFESSOR KLEEMAN, DR. STEPHENSON, MR. ROBINSON

1. **General Physics.** This course presents the fundamental facts and laws of physics by means of experimental lectures, class work, and laboratory practice. The work comprises a study of the laws of motion, energy, properties of matter, wave

motion, sound, light, electricity and magnetism, with particular reference to the applications of the principles studied in engineering and to the explanation of natural phenomena. In the laboratory the student is offered an opportunity to demonstrate to himself the various fundamental laws in physics, with which he has become acquainted in the corresponding lectures, and to carry out measurements of some of the important physical quantities. The laboratory work is so arranged that the student acquires considerable experience in assembling and building up apparatus.

Required of sophomores in the civil and electrical engineering courses, and in the B. S. in chemistry course. Elective for juniors and seniors in the A. B. courses who have had mathematics 2a. Five hours weekly during first semester and three hours weekly during second semester.

1a. General Physics. This course is similar to physics 1. It is intended to prepare the student to meet the requirements for admission to the medical department of the university.

Required of sophomores in the pre-medical course. Four hours weekly throughout the year.

1b. General Physics. This is a course intended for those who desire a different view into the field of physics than that usually given to engineers. It is intended especially for students in the A. B. courses who are not expecting to go extensively into scientific work, but who desire information in this fundamental science. The main facts and laws of physics are presented through demonstration lectures, class work, and laboratory work. The philosophical aspect of these facts and laws is emphasized, but at the same time sufficient attention is given to practical applications and to problem work to avoid losing the idea of the concreteness and usefulness of this branch of science.

Elective for juniors and seniors in the A. B. courses. Three hours weekly throughout the year.

2. Heat, Electricity and Magnetism. This course is a more critical study of these portions of physics than is given in physics 1. It includes the various systems of thermometry and heat measurements and the study of thermodynamics. In electricity and magnetism it includes an exposition of the funda-

mental theories of electrical and magnetic measurements. The theory is covered by lectures and collateral reading and in the laboratory the student acquires familiarity with the various processes and more complicated apparatus essential to the study of physical phenomena.

Required of juniors in the B. S. in chemistry course; elective for seniors in the A. B. courses who have had physics 1 and mathematics 2a. Three hours weekly throughout the year.

3. Sound and Light. This course is a continuation of physics 2. In sound an exceptionally large variety of apparatus is available for experimental work. In light the course takes up the laws of radiation, and the study of physical optics, including polarization, spectra, wave-length measurements, etc. The course is conducted in the same way as physics 2.

Required of seniors in the B. S. in chemistry course; elective for seniors in the A. B. courses who have had physics 1 and mathematics 2a. Three hours weekly throughout the year.

4. Modern Physical Theories. This course is an historical review of the field of physics and a general summary of modern theories and tendencies in this field. It takes up the electromagnetic theory and the laws of radiation and finally develops the present ideas of electrons, radio activity, X-rays, etc.

Required of seniors in the B. S. in chemistry course; elective for seniors in the A. B. courses and for graduate students who have had the equivalent of physics 1, 2 and 3. One hour weekly throughout the year.

For the year 1921-22 this course is given by Dr. Richtmyer of the Physics Department of Cornell University.

5. The Electron Theory. This course treats of the nature and properties of ions in gases, solids and liquids; the electronic constants; radio-active changes; the propagation of various radiations; the ionization of matter by various ionizing agents; and the electron theory of matter and of electrical conduction. Opportunity for research is provided.

Elective for graduate students and seniors who have had the necessary training in physics. One hour weekly throughout the year.

6. Vacuum Tubes and Vacuum Tube Phenomena. This course consists of a critical study of vacuum tube phenomena and is devoted mainly to the audion and audion circuits. It takes up the study of electrons and their fields of force, thermionic emission phenomena, two electrode tubes and three electrode tubes, the use of the latter as amplifiers, oscillation generators and modulators for radio and other purposes. Consideration is also given to X-ray tubes, Braun tubes, dynatrons and other tubes. Through the courtesy of the Research Laboratory of the General Electric Company exceptionally good facilities are available for experimental work.

Elective, for record, for seniors and graduate students who have had sufficient experience in physics. One lecture and one laboratory period weekly, throughout the year.

MODERN LANGUAGES

PROFESSOR BARNES, ASSISTANT PROFESSOR STEWART, ASSISTANT PROFESSOR CROWELL, MR. TILLY, DR. FUNDENBURG, MR. JAGU

German

1. German 1. Grammar for review and reference, with exercises and drill on syntax; writing and reproduction, with colloquial practice and work in vocabulary building based on a course in German composition. The academic divisions read and discuss works selected from the classics, from nineteenth century drama and fiction, and from historical writings. The reading in the technical divisions is for the most part given over to scientific books and periodicals.

Required of all freshmen who offer German for admission. Five hours weekly throughout the year.

2. German 2. A beginners' course in grammar, composition and reading. Easy selections in prose and poetry, historical matter, a novel and a play are read. While thorough preparation and careful drill are insisted upon throughout, the amount of reading demanded is considerable.

Optional with Spanish for sophomores in the A. B. course A; optional with French if Spanish is offered for admission, optional with Spanish if French is offered for admission, for sophomores in the A. B. courses B, C, and E, the B. S. in chem-

istry course, and the pre-medical course; optional with French or Spanish in the A. B. course D. Five hours weekly throughout the year.

3. German 3. Advanced composition and independent essays; newspaper reading; an intensive study of Schiller or Goethe, or a course of reading in nineteenth century drama.

Elective in continued and advanced divisions for juniors and seniors in the A. B. courses who have had one college year of German. Three hours weekly throughout the year.

4. German 4. Theme writing; history of German literature; studies in the classic period, with extended reading of selected authors.

Elective in the A. B. courses for seniors who have had German 3. Three hours weekly throughout the year.

French

5. French 1. A rapid review of the elements of grammar, and the study of syntax and composition; practice in exact translation; a range of reading designed to give a general view of the history of French literature.

Required of all freshmen who offer French for admission. Five hours weekly throughout the year.

6. French 2. A beginners' course in grammar, composition and reading. Easy selections in prose and poetry, historical matter, a novel and a play are read. While thorough preparation and careful drill are insisted upon throughout, the amount of reading demanded is considerable.

Required of freshmen in the A. B. course A. Optional with German if Spanish is offered for admission, optional with Spanish if German is offered for admission, for sophomores in the A. B. courses B, C, and E, the B. S. in chemistry course, and the pre-medical course; optional with German or Spanish in the A. B. course D. Five hours weekly throughout the year.

7. French 3. Grammar reviewed; exercises in vocabulary, idioms, and writing in connection with basic texts. This work is followed by a reading course and special studies in nineteenth century literature.

Elective in continued and advanced divisions for juniors and seniors in the A. B. courses who have had one college year of French. Three hours weekly throughout the year.

8. **French 4.** This course is devoted to the study of some of the classics of the seventeenth century. Selected works of Corneille, Racine, Molière, La Fontaine, and Bossuet are read, together with parts of Lanson's *Histoire de la Littérature Française*. One hour a week is devoted to syntax and composition.

Elective in the A. B. courses for seniors who have had French 3. Three hours weekly throughout the year.

Spanish

9. **Spanish 1.** A course in composition, involving review and continuation of grammatical study, based on narrative texts descriptive of Spain and South America. Newspapers and commercial and geographical articles are read, together with selections from classical and modern drama and recent fiction.

Required of all freshmen who offer Spanish for admission. Five hours weekly throughout the year.

10. **Spanish 2.** A beginners' course in grammar, composition, and reading. Spanish-American subjects, descriptive, commercial, and geographical, form the basis of the work. A novel and a play are also read.

Optional with German for sophomores in the A. B. course A; optional with French if German is offered for admission, optional with German if French is offered for admission, for sophomores in the A. B. courses B, C, and E, the B. S. in chemistry course, and the pre-medical course; optional with French or German in the A. B. course D. Five hours weekly throughout the year.

11. **Spanish 3.** Advanced composition and commercial correspondence; newspaper reading. A technical essay, one or more classic dramas, and a standard modern novel are read.

Elective in continued and advanced divisions for juniors and seniors in the A. B. courses who have had one college year of Spanish. Three hours weekly throughout the year.

12. **Spanish 4.** Reading of newspapers, periodicals, and commercial matter continued; a survey of the classic and nineteenth century periods in Spanish literature. Selected dramas and novels are read.

Elective in the A. B. courses for seniors who have had Spanish 3. Three hours weekly throughout the year.

PHILOSOPHY

ASSISTANT PROFESSOR CHIDSEY

1. **History of Philosophy.** In this course students without previous acquaintance with philosophy may obtain an outline knowledge of its European history from the time of its development among the Ionic Greeks down to and including the philosophy of the post-Kantian idealists. There are two lectures and one discussion period each week, together with assignments in a text-book. Selected portions of the work of the more important philosophers are read.

Optional with mathematics and history of Greek literature for sophomores in the A. B. courses. Three hours weekly throughout the year.

2. **Problems of Philosophy.** This is an elementary lecture course and gives a general survey of problems in ethics, philosophy of religion, metaphysics, and epistemology. The following topics are treated: the problem of the *summum bonum*; the problem of evil; optimism, pessimism, and meliorism; the existence of the external world; the problem of mind and body; the nature of the self and immortality; our knowledge of other minds; the traditional arguments for the existence of God; mechanism vs. teleology; theories of truth and reality. The treatment is systematic rather than historical. Students are assigned selected passages from both classical and contemporary philosophical literature. Written exercises and weekly discussions form a part of the course.

Elective for juniors and seniors in the A. B. courses. Three hours weekly throughout the year.

3a. **Logic.** This course is an introduction to logic and deals

with the following topics: definition of logic and its relation to the other philosophical disciplines; classification and class names; ambiguity and definition; the nature and interpretation of propositions; the syllogism; induction; our knowledge of general principles and universals; truth and falsehood; knowledge, error, and probable opinion; the limits of knowledge. There are daily discussions based upon a text-book and occasional written exercises.

Elective for juniors and seniors in the A. B. courses who have had course 1 or 2. Three hours weekly during the first semester.

Not given in 1921-22. See Course 6.

3b. Ethics. This course gives a systematic view of the moral life. It deals with such questions as the meaning of good, right and wrong, moral obligation, moral sanctions, virtue, institutional life, progress. There are daily discussions based upon a text book, written exercises, and a thesis.

Elective for juniors and seniors in the A. B. courses who have had course 1 or course 2. Three hours weekly during the second semester.

4. History and Philosophy of Education. This course is especially designed for students who intend to enter the profession of teaching. During the first semester an outline of the history of educational theory is given; during the second semester, contemporary works on the aims and methods of education are studied for the purpose of giving the student an opportunity to formulate his own constructive program. There are daily discussions, weekly quizzes, and occasional written reports.

Elective for juniors and seniors in the A. B. courses who have had course 1 or its equivalent. Three hours weekly throughout the year.

Offered in alternate years. Not given in 1921-22.

5. Philosophy of Religion. This course gives a systematic account of the religious experience. It deals with theories of the origin of religion with the different views of its nature, and with its metaphysical basis. A thesis is required and students

are given the opportunity to lead in the discussion of subjects especially assigned to them.

Elective for seniors in the A. B. courses who have had two full year courses in philosophy. Three hours weekly throughout the year

Offered in alternate years. Given in 1921-22.

6. Present Tendencies in Philosophy. This course gives a brief survey of current philosophy with special reference to its application in religion and morals. The authors read represent such modern movements as naturalism, idealism, pragmatism, instrumentalism, and realism. Discussions, required reading, and a thesis.

Elective for seniors in the A. B. course who have had two full year courses in philosophy. Three hours weekly throughout the year.

Offered in alternate years. Given in 1921-22 as a half course instead of Course 3a.

PSYCHOLOGY

ASSOCIATE PROFESSOR MARCH

1. General Psychology. This course begins with the study of the elements and the simpler processes and laws of the mind, and continues with a general survey of the field of individual normal psychology.

Required of juniors in the B. S. course in chemistry. Elective for juniors in the A. B. courses. Three hours weekly throughout the year.

2. Advanced Psychology. This course includes educational psychology, comparative psychology, and social psychology, with emphasis upon psychological theory.

Elective for seniors in the A. B. courses who have had course 1. Three hours weekly throughout the year.

3. General Psychology. This course is a brief form of course 1, with emphasis upon the applications of psychology to business and employment.

Required of seniors in the civil engineering course, administrative option. Three hours weekly during the second semester.

RHETORIC AND PUBLIC SPEAKING

PROFESSOR MC KEAN

1. Sophomore Orations. The work consists of three distinct parts:

a) Formal lectures on the art of public speaking, together with abundant illustrations and class practice on the principles involved.

b) The writing of orations under individual criticism.

c) The delivery of these orations before the class, subject to further criticism for both individual and general instruction.

Supplemental to this work, still further individual criticism and instruction, based on personal needs, are given all students who enter the various contests regularly held under the auspices of the department.

Required of sophomores in the A. B. civil engineering, electrical engineering, and pre-medical courses. One hour weekly throughout the year.

2. Junior Orations. The work is like that of course 1, but of an advanced character.

Required of juniors in the A. B. civil engineering and electrical engineering courses. One hour weekly throughout the year.

3. Senior Orations. The work is like that of course 1, but of a more advanced character.

In addition, instruction is given in the principles of vocal technique as the basis for effective public speaking, and attention is given to individual defects needing correction. The object is to develop in each student the practical mastery of a well-controlled organ of oral expression. This work is graded and opportunity is afforded for supervised practice of the principles involved.

Required of seniors in the A. B. courses. One hour weekly throughout the year.

4. Argumentation and Debate. The work consists of two distinct parts:

a) The study of the theory of argumentation and debate,

based upon a text-book, and pursued by means of recitations, criticisms, discussions, and informal lectures.

b) Practice in the analysis of subjects for debates, in the preparation of briefs and arguments, and in the more formal debates of the class room.

Considerable attention is given to parliamentary law, and practice is accorded in the conduct of business sessions.

Elective for juniors in the A. B. courses. Three hours weekly throughout the year.

5. **Advanced Argumentation and Debate.** The work is of a more advanced character than that in course 4, and consists of class-room debates; of the discussion of such practical problems as naturally grow out of this work; and of the formal presentation of oral theses, subject to individual criticism and general discussion.

Elective for seniors in the A. B. courses who have completed course 4. Three hours weekly throughout the year.

6. **Honor Course.** Open to seniors who have complied with the requirements for special honors. Two hours weekly throughout the year.

SPECIAL LECTURES

It is the policy of the college to provide its students with the advantages of frequent lectures by specialists in the various departments of knowledge.

In endowing the Ichabod Spencer Professorship in Philosophy, Mrs. Katherine Spencer Leavitt set aside the sum of \$25,000 to establish a lectureship in memory of her father, the Reverend Ichabod Spencer, D. D., of the class of 1822, to be known as the Ichabod Spencer Lectureship in Psychology. These lectures are given by distinguished scholars in this department and are open to the public.

A series of lectures is given by the President of the College for the junior and senior classes. This course is open to the public.

Special lectures are given by well known men in connection with the various departments of instruction, as described on pages 48-94.

LIBRARY

The library occupies Nott Memorial Hall. It contains fifty-three thousand volumes, and includes the engineering and scientific library of the late Professor Gillespie, the collection of mathematical works made by the late John Patterson, of Albany; the library of the late Hon. Henry J. Cullen, of the class of 1860, and the library of ancient and classical languages and literatures of the late Professor Tayler Lewis. Additions are made yearly. The income from a bequest of five thousand dollars left by the late Lemon Thomson, Esq., of Albany, of the class of 1850, is devoted to the purchase of books on American subjects, especially history and political science. An alcove, known as the Thomson Alcove, is reserved for these books. By the will of the late Rev. Oscar Blakeslee Hitchcock, of the class of 1852, a bequest of upwards of thirty thousand dollars was left to the college for the purchase of books, manuscripts, etc. A most important accession is the Croes Engineering Library, the gift of Mr. Edgar Beach Van Winkle, of the class of 1860, for the use of the engineering department of the college. The library is classified according to the Dewey decimal system and a dictionary card catalogue, on the Dewey plan, is now available.

Many periodicals and the transactions of many learned societies are received.

Library Rules

Hours: 8 A. M. to 6 P. M. and 7:30-9 P. M., from Monday to Friday; 8 A. M. to 12 M. on Saturday.

The library is closed on Sundays and legal holidays.

The library is open during vacation at hours to be announced.

Loan of books: Reference, Cullen and valuable books are not to be loaned.

Reserved books may be loaned over night, i. e., from 9 P. M. to 8 A. M. There is a fine of \$1.00 per day or part of a day for each reserved book overdue.

Periodicals are regarded as reference books.

All other books may be loaned, not more than two at a time, for a period of two weeks, and may be once renewed, unless called for. A fine of ten cents per day is charged for all books

overdue, and all library privileges are withdrawn until the book is returned and the fine paid.

THE NATURAL HISTORY MUSEUM

PROFESSOR STOLLER, CURATOR

The Wheatley collection of minerals, presented to the college in 1858, by E. C. Delavan, Esq., contains 4,000 specimens, many of which represent the more valuable forms. This collection has recently been carefully inspected by Dr. D. S. Martin of New York city. All of the specimens have been re-identified and the entire collection has been re-arranged and placed in order for exhibition and for study.

In geology there is a general collection of rocks and minerals, and a considerable collection of the paleozoic rocks and fossils of the New York formations.

In zoology the collection of mounted birds numbers 311 specimens, representing 161 species of the bird fauna of the eastern United States. These have recently been carefully inspected, and re-labelled. Fishes, amphibia and reptiles, especially of the local fauna, are represented by specimens in alcohol. In the department of invertebrates the collections of marine animals made by Dr. Harrison E. Webster are extensive, including sponges, corals, worms, crustacea and mollusks, the total number of species represented being over 5,000. The Wheatley collection of shells, presented by E. C. Delavan, Esq., consists of 8,000 specimens.

The botanical collections include a nearly complete set of local flowering plants, the work of Professor Jonathan Pearson. To this there has since been added a complete set of the ferns and fern allies of Schenectady county. The herbarium also includes a considerable number of foreign plants, including representative collections from Germany, Spain, Asia Minor and England, as well as some specimens from Iceland, Norway, France and Switzerland. They have been sorted and distributed in a single series following the latest accepted sequence, that of Engler and Prantl's *Natürliche Pflanzenfamilien*, making the entire collection of some 8,000 or 10,000 specimens readily accessible for reference and study.

The museum is open to the public on Wednesday afternoon

and Saturday morning. Visitors may be admitted at other times by making application to the college librarian.

THE LITERARY SOCIETIES

The Philomathean Society, founded in 1793, about two years prior to the founding of the college, and the Adelpheic Society, founded in 1796, invite to membership all students specially interested in debating. The societies hold frequent meetings during the autumn and winter months for the discussion of current, social and political questions. A joint debate is held in December in competition for the Allison-Foote prizes, page 128.

RELIGIOUS LIFE

The Young Men's Christian Association of the college, which has its headquarters in Silliman hall, has general charge of the religious life under the supervision of members of the faculty. Silliman Hall is well adapted to the purposes and activities of the association, with its large public rooms on the first floor, and the rooms which are used for meetings of various kinds on the second floor. The association maintains a reading room, and the building is open throughout the day for the convenience of the undergraduates who wish to make use of its rooms for study.

Under the auspices of the association, vesper services are held Sunday afternoons throughout the college year, at which members of the faculty connected with the college and undergraduates of the upper classes deliver addresses. The association provides for Bible and mission study classes, coöperates with the office of the registrar of the College in the operation of an employment bureau and works in conjunction with the Industrial Service Department of the General Electric and American Locomotive Companies and with the city Y. M. C. A. in providing teachers for the classes which those organizations conduct among the foreign element of the city.

From time to time, during the college year, the association gives receptions and entertainments for the college classes.

SUMMARY OF COURSES

The numeral after a subject refers to the course as described in the departmental statement; the number in parenthesis refers to the page where the statement is given. The hours show the credit assigned each subject.

A. B. Course A

The full entrance requirement in Greek is required for admission to this course

Freshman Year

First Semester

| | | |
|------------------------------|------|---------|
| Greek 1a | (78) | 3 hours |
| Latin 1 | (81) | 4 hours |
| French 2 | (89) | 5 hours |
| English 1 | (74) | 3 hours |
| Mathematics 1a | (83) | 4 hours |
| Physiology and Hygiene | (81) | 1 hour |

Total 20 hours

Second Semester

Studies of first semester continued

One credit hour throughout the year is required in Gymnastics

Sophomore Year

First Semester

| | | |
|-------------------------|------|---------|
| Greek 2a | (78) | 3 hours |
| Latin 2 | (82) | 3 hours |
| English 2 | (74) | 3 hours |
| German 2 | (88) | 5 hours |
| or | | |
| Spanish 2 | (90) | 5 hours |
| Mathematics 1b | (83) | 3 hours |
| or | | |
| General Science 2 | (77) | 3 hours |
| Rhetoric 1 | (94) | 1 hour |

Total 18 hours

Second Semester

Studies of the first semester continued

Junior Year

First Semester

| | | |
|------------------|-------|----------|
| Rhetoric 2 | (94) | 1 hour |
| Electives | (105) | 15 hours |

Total 16 hours

Second Semester

Studies of the first semester continued

Senior Year*First Semester*

| | | |
|------------------|-------|----------------|
| Rhetoric 3 | (94) | 1 hour |
| Electives..... | (105) | 15 hours |
| | | <hr/> |
| | | Total 16 hours |

Second Semester

Studies of first semester continued

A. B. Course B

Greek is not required for admission to this course

Freshman Year*First Semester*

| | | |
|------------------------------|------|----------------|
| Greek 1b | (78) | 3 hours |
| Latin 1 | (81) | 4 hours |
| French 1 | (89) | 5 hours |
| or | | |
| German 1 | (88) | 5 hours |
| or | | |
| Spanish 1 | (90) | 5 hours |
| English 1 | (74) | 3 hours |
| Mathematics 1a | (83) | 4 hours |
| Physiology and Hygiene | (81) | 1 hour |
| | | <hr/> |
| | | Total 20 hours |

Second Semester

Studies of first semester continued

One credit hour throughout the year is required in Gymnastics

Sophomore Year*First Semester*

| | | |
|-----------------|------|---------|
| Greek 2b | (78) | 3 hours |
| Latin 2 | (82) | 3 hours |
| English 2 | (74) | 3 hours |
| French 2 | (89) | 5 hours |
| or | | |
| German 2 | (88) | 5 hours |
| or | | |
| Spanish 2 | (90) | 5 hours |

| | | |
|-------------------------|------|---------|
| Mathematics 1b | (83) | 3 hours |
| or | | |
| General Science 2 | (77) | 3 hours |
| Rhetoric 1 | (94) | 1 hour |

Total 18 hours

Second Semester

Studies of first semester continued

Junior Year

First Semester

| | | |
|------------------|-------|----------|
| Rhetoric 2 | (94) | 1 hour |
| Electives | (105) | 15 hours |

Total 16 hours

Second Semester

Studies of first semester continued

Senior Year

First Semester

| | | |
|------------------|-------|----------|
| Rhetoric 3 | (94) | 1 hour |
| Electives | (105) | 15 hours |

Total 16 hours

Second Semester

Studies of first semester continued

A. B. Course C

Freshman Year

First Semester

| | | |
|------------------------------|------|---------|
| French 1 | (89) | 5 hours |
| or | | |
| German 1 | (88) | 5 hours |
| or | | |
| Spanish 1 | (90) | 5 hours |
| English 1 | (74) | 3 hours |
| Mathematics 1a | (83) | 4 hours |
| History | (79) | 3 hours |
| General Science 1 | (77) | 3 hours |
| Physiology and Hygiene | (81) | 1 hour |

Total 19 hours

Second Semester

Studies of first semester continued

One credit hour throughout the year is required in Gymnastics

Sophomore Year*First Semester*

| | | |
|---|------|---------|
| French 2..... | (89) | 5 hours |
| or | | |
| German 2..... | (88) | 5 hours |
| or | | |
| Spanish 2..... | (90) | 5 hours |
| English 2..... | (74) | 3 hours |
| History 1..... | (79) | 3 hours |
| Mathematics 1b..... | (83) | 3 hours |
| or | | |
| History of Philosophy..... | (91) | 3 hours |
| or | | |
| History of Greek Literature, Greek 5..... | (78) | 3 hours |
| Chemistry 1..... | (49) | 3 hours |
| Rhetoric 1..... | (94) | 1 hour |

 Total 18 hours
Second Semester

Studies of first semester continued

Junior Year*First Semester*

| | | |
|-----------------|-------|----------|
| Rhetoric 2..... | (94) | 1 hour |
| Electives..... | (105) | 15 hours |

 Total 16 hours
Second Semester

Studies of first semester continued

Senior Year*First Semester*

| | | |
|-----------------|-------|----------|
| Rhetoric 3..... | (94) | 1 hour |
| Electives..... | (105) | 15 hours |

 Total 16 hours
Second Semester

Studies of first semester continued

A. B. Course D**Freshman Year***First Semester*

| | | |
|---------------------|------|---------|
| Latin 1..... | (81) | 4 hours |
| English 1..... | (74) | 3 hours |
| Mathematics 1a..... | (83) | 4 hours |

| | | |
|------------------------------|------|---------|
| General Science 1 | (77) | 3 hours |
| History 1 | (79) | 3 hours |
| Physiology and Hygiene | (81) | 1 hours |

Total 18 hours

Second Semester

Studies of first semester continued

One credit hour throughout the year is required in Gymnastics

Sophomore Year

First Semester

| | | |
|--|------|---------|
| French 2 | (89) | 5 hours |
| or | | |
| German 2 | (88) | 5 hours |
| or | | |
| Spanish 2 | (90) | 5 hours |
| English 2 | (74) | 3 hours |
| History 1 | (79) | 3 hours |
| Mathematics 1b | (83) | 3 hours |
| or | | |
| History of Philosophy 1 | (91) | 3 hours |
| or | | |
| History of Greek Literature, Greek 5 | (78) | 3 hours |
| Chemistry 1 | (49) | 3 hours |
| Rhetoric 1 | (94) | 1 hour |

Total 18 hours

Second Semester

Studies of first semester continued

Junior Year

First Semester

| | | |
|------------------|-------|----------|
| Rhetoric 2 | (94) | 1 hour |
| Electives | (105) | 15 hours |

Total 16 hours

Second Semester

Studies of first semester continued

Senior Year

First Semester

| | | |
|------------------|-------|----------|
| Rhetoric 3 | (94) | 1 hour |
| Electives | (105) | 15 hours |

Total 16 hours

Second Semester

Studies of first semester continued

A. B. Course E**Freshman Year***First Semester*

| | | |
|------------------------------|------|---------|
| Latin 1 | (81) | 4 hours |
| French 1 | (89) | 5 hours |
| or | | |
| German 1 | (88) | 5 hours |
| or | | |
| Spanish 1 | (90) | 5 hours |
| English 1 | (74) | 3 hours |
| Mathematics 1a | (83) | 4 hours |
| History 1 | (79) | 3 hours |
| Physiology and Hygiene | (81) | 1 hours |

Second Semester

Total 20 hours

Studies of first semester continued

One credit hour throughout the year is required in Gymnastics

Sophomore Year*First Semester*

| | | |
|--|------|---------|
| Latin 2 | (82) | 3 hours |
| French 2 | (89) | 5 hours |
| or | | |
| German 2 | (88) | 5 hours |
| or | | |
| Spanish 2 | (90) | 5 hours |
| English 2 | (74) | 3 hours |
| History 1 | (79) | 3 hours |
| Mathematics 1b | (83) | 3 hours |
| or | | |
| History of Philosophy 1 | (91) | 3 hours |
| or | | |
| History of Greek Literature, Greek 5 | (78) | 3 hours |
| Rhetoric 1 | (94) | 1 hour |

Total 18 hours

Second Semester

Studies of first semester continued

Junior Year*First Semester*

| | | |
|------------------|-------|----------|
| Rhetoric 2 | (94) | 1 hour |
| Electives | (105) | 15 hours |

Total 16 hours

Second Semester

Studies of first semester continued

Senior Year*First Semester*

| | | |
|------------------|-------|----------|
| Rhetoric 3 | (94) | 1 hour |
| Electives..... | (105) | 15 hours |

 Total 16 hours
Second Semester

Studies of first semester continued

List of Electives for Juniors and Seniors in the A. B. Courses

An elective for which there is an insufficient number of candidates may be withdrawn at the discretion of the department.

Five electives and rhetoric are required.

Each junior is required to choose as one elective, to be continued for two years, a subject previously pursued in college.

Each senior is required to continue, in addition to the elective named in his junior year for continuation, one other junior elective.

The head of a department may direct the choice of electives in other departments, for honor students, to the number of six hours in each year.

Any student in the A. B. course may become a candidate for the degree of Bachelor of Science by making application to the Dean of Students before the beginning of his junior year. He must then elect not less than three courses in science and mathematics during his junior and senior year.

Junior Electives

| | |
|----------------------|---------|
| Argumentation..... | 3 hours |
| The Bible..... | 3 hours |
| Biology..... | 3 hours |
| Chemistry..... | 3 hours |
| Economics..... | 3 hours |
| English..... | 3 hours |
| French..... | 3 hours |
| Geology (General)... | 3 hours |
| German..... | 3 hours |
| Greek..... | 3 hours |
| History..... | 3 hours |
| Latin..... | 3 hours |
| Logic..... | 3 hours |
| Mathematics..... | 3 hours |
| Mechanics..... | 3 hours |
| Philosophy..... | 3 hours |
| Physics..... | 3 hours |
| Psychology..... | 3 hours |
| Spanish..... | 3 hours |

Senior Electives

| | |
|------------------------|---------|
| Argumentation (Adv'd) | 3 hours |
| The Bible..... | 3 hours |
| Biology..... | 3 hours |
| Chemistry..... | 3 hours |
| Economics (Advanced). | 3 hours |
| English..... | 3 hours |
| Ethics..... | 3 hours |
| French..... | 3 hours |
| Geology (General)... | 3 hours |
| German..... | 3 hours |
| Greek..... | 3 hours |
| History..... | 3 hours |
| History of Education.. | 3 hours |
| International Law..... | 3 hours |
| Latin..... | 3 hours |
| Mathematics..... | 3 hours |
| Mechanics..... | 3 hours |
| Philosophy (Advanced) | 3 hours |
| Psychology (Advanced) | 3 hours |
| Physics..... | 3 hours |
| Spanish..... | 3 hours |

Civil Engineering Course

Freshman Year

First Semester

| | | |
|------------------------------|------|---------|
| French I..... | (89) | 5 hours |
| or | | |
| German I..... | (88) | 5 hours |
| or | | |
| Spanish I..... | (90) | 5 hours |
| English I..... | (74) | 3 hours |
| Engineering Drawing GE1..... | (58) | 3 hours |
| Mathematics I..... | (83) | 6 hours |
| Physiology and Hygiene..... | (81) | 1 hour |
| Lectures GE6..... | (59) | 2 hours |

Total 20 hours

Second Semester

| | | |
|------------------------------|------|---------|
| French I..... | (89) | 5 hours |
| or | | |
| German I..... | (88) | 5 hours |
| or | | |
| Spanish I..... | (90) | 5 hours |
| English I..... | (74) | 3 hours |
| Engineering Drawing GE2..... | (58) | 2 hours |
| Mathematics I..... | (83) | 6 hours |
| Surveying GE4..... | (59) | 3 hours |
| Physiology and Hygiene..... | (81) | 1 hour |

Total 20 hours

One credit hour throughout the year is required in Gymnastics

Surveying, 15 days, required of all engineering students at the close of their freshman year. G.E.5.

Sophomore Year

First Semester

| | | |
|------------------------------------|------|---------|
| Mathematics 2..... | (84) | 5 hours |
| Physics I..... | (85) | 5 hours |
| Chemistry I..... | (49) | 3 hours |
| History 3..... | (80) | 2 hours |
| English 3..... | (75) | 2 hours |
| Elementary Machine Design GE7..... | (60) | 2 hours |
| Public Speaking. I..... | (94) | 1 hour |

Total 20 hours

Second Semester

| | | |
|------------------------|------|---------|
| Mathematics 2..... | (84) | 5 hours |
| Mechanics 1..... | (85) | 2 hours |
| Physics 1..... | (85) | 3 hours |
| Chemistry 1..... | (49) | 3 hours |
| History 3..... | (80) | 2 hours |
| English 3..... | (75) | 2 hours |
| Public Speaking 1..... | (94) | 1 hour |
| Lectures GE 8..... | (59) | 2 hours |

 Total 20 hours
Junior Year, Technical Option*First Semester*

| | | |
|---|------|---------|
| Railway and Highway Engineering CE9 | (60) | 3 hours |
| Machine Design CE10 | (60) | 3 hours |
| Applied Mechanics ME1..... | (69) | 4 hours |
| Electrical Engineering EE5 | (70) | 3 hours |
| Economic Geology 4..... | (77) | 3 hours |
| Economics 3 | (65) | 3 hours |
| Public Speaking 2 | (94) | 1 hour |

 Total 20 hours
Second Semester

| | | |
|----------------------------------|------|---------|
| Mechanics of Materials CE14..... | (61) | 4 hours |
| Electrical Engineering EE6 | (70) | 3 hours |
| Thermodynamics ME6..... | (70) | 2 hours |
| Theory of Elasticity CE13 | (61) | 3 hours |
| Accounting CE16 | (61) | 2 hours |
| Hydraulics CE12..... | (61) | 4 hours |
| Public Speaking 2 | (94) | 1 hour |
| Testing Laboratory CE15 | (61) | 1 hour |

 Total 20 hours
Senior Year, Technical Option*First Semester*

| | | |
|-----------------------------------|------|---------|
| Railway Engineering CE17 | (62) | 2 hours |
| Structural Engineering CE18 | (62) | 4 hours |
| Structural Design CE19 | (62) | 2 hours |
| Business Law CE20 | (62) | 3 hours |
| Hydraulic Engineering CE21 | (62) | 3 hours |
| Heat Engineering CE23 | (63) | 3 hours |
| Finance and Banking CE22 | (63) | 3 hours |

 Total 20 hours

Second Semester

| | | |
|---|------|---------|
| Reinforced Concrete CE25 | (63) | 3 hours |
| Structural Design CE27 | (64) | 1 hour |
| Contracts and Specifications CE28 | (64) | 2 hours |
| Sanitary Engineering CE29 | (64) | 3 hours |
| Advanced Structures CE26..... | (64) | 4 hours |
| Heat Engineering CE24 | (63) | 3 hours |
| Business Administration CE30 | (64) | 3 hours |

Total 19 hours

Junior Year, Administrative Option*First Semester*

| | | |
|----------------------------------|------|---------|
| Machine Design CE10 | (60) | 3 hours |
| Electrical Engineering EE5 | (70) | 3 hours |
| Applied Mechanics ME1..... | (69) | 4 hours |
| Economics 2 | (65) | 3 hours |
| Economic Geology 4 | (77) | 3 hours |
| European History 2 | (74) | 3 hours |

Total 19 hours

Second Semester

| | | |
|-----------------------------------|------|---------|
| Mechanics of Materials CE14..... | (61) | 4 hours |
| Electrical Engineering CE26 | (64) | 3 hours |
| Thermodynamics ME6..... | (70) | 2 hours |
| Testing Laboratory CE15 | (61) | 1 hour |
| Accounting CE16 | (61) | 2 hours |
| Hydraulics CE12..... | (61) | 4 hours |
| European History 2 | (79) | 3 hours |

Total 19 hours

Senior Year, Administrative Option*First Semester*

| | | |
|-----------------------------------|------|---------|
| Structural Engineering CE18 | (62) | 4 hours |
| Structural Design CE19 | (62) | 2 hours |
| Business Law CE20 | (62) | 3 hours |
| Electrical Engineering EE7 | (70) | 3 hours |
| Heat Engineering CE23 | (63) | 3 hours |
| Finance and Banking CE22 | (63) | 3 hours |
| Public Speaking 2 | (94) | 1 hour |

Total 19 hours

Second Semester

| | | |
|---|------|---------|
| Advanced Structural CE26 | (64) | 4 hours |
| Psychology 3 | (93) | 3 hours |
| Contracts and Specifications CE28 | (64) | 2 hours |
| Electrical Engineering EE8 | (70) | 3 hours |
| Heat Engineering CE24 | (63) | 3 hours |
| Business Administration CE30 | (64) | 3 hours |
| Public Speaking 3 | (94) | 1 hour |

 Total 19 hours
Electrical Engineering Course**Freshman Year***First Semester*

| | | |
|------------------------------|------|---------|
| French I..... | (89) | 5 hours |
| or | | |
| German I..... | (88) | 5 hours |
| or | | |
| Spanish I..... | (90) | 5 hours |
| English I..... | (74) | 3 hours |
| Engineering Drawing GE1..... | (67) | 3 hours |
| Mathematics I..... | (83) | 6 hours |
| Physiology and Hygiene..... | (81) | 1 hour |
| Lectures GE6..... | (68) | 2 hours |

 Total 20 hours
Second Semester

| | | |
|------------------------------|------|---------|
| French I..... | (89) | 5 hours |
| or | | |
| German I..... | (88) | 5 hours |
| or | | |
| Spanish I..... | (90) | 5 hours |
| English I..... | (74) | 3 hours |
| Engineering Drawing GE2..... | (67) | 2 hours |
| Mathematics I..... | (83) | 6 hours |
| Surveying GE4..... | (68) | 3 hours |
| Physiology and Hygiene..... | (81) | 1 hour |

 Total 20 hours

One credit hour throughout the year is required in Gymnastics

Surveying, 15 days, required of all engineering students at the close of their freshman year.

Sophomore Year*First Semester*

| | | |
|------------------------------------|------|---------|
| Mathematics 2..... | (84) | 5 hours |
| Physics 1..... | (85) | 5 hours |
| Chemistry 1..... | (49) | 3 hours |
| History 3..... | (80) | 2 hours |
| English 3..... | (75) | 2 hours |
| Elementary Machine Design GE7..... | (69) | 2 hours |
| Public Speaking 1..... | (94) | 1 hour |

 Total 20 hours
Second Semester

| | | |
|------------------------|------|---------|
| Mathematics 2..... | (84) | 5 hours |
| Mechanics 1..... | (85) | 2 hours |
| Physics 1..... | (85) | 3 hours |
| Chemistry 1..... | (49) | 3 hours |
| History 3..... | (80) | 2 hours |
| English 3..... | (75) | 2 hours |
| Public Speaking 1..... | (94) | 1 hour |
| Lectures GE8..... | (59) | 2 hours |

 Total 20 hours
Junior Year*First Semester*

| | | |
|---|------|---------|
| Advanced Mechanics ME1..... | (69) | 4 hours |
| Electrical Engineering Theory EE1..... | (70) | 3 hours |
| Electrical Engineering Laboratory EE21..... | (71) | 4 hours |
| Mathematics 3..... | (84) | 3 hours |
| Hydraulics CE11..... | (60) | 3 hours |
| Public Speaking 2..... | (94) | 1 hour |

 Total 18 hours
Second Semester

| | | |
|---|------|---------|
| Advanced Mechanics ME2..... | (69) | 5 hours |
| Electrical Engineering Theory EE2..... | (70) | 3 hours |
| Electrical Engineering Laboratory EE22..... | (71) | 4 hours |
| Mathematics 3..... | (84) | 3 hours |
| Public Speaking 2..... | (94) | 1 hour |

 Total 16 hours

Senior Year*First Semester*

| | | |
|---|-------|---------|
| Thermodynamics ME3..... | (69) | 3 hours |
| Electrical Engineering Theory EE3..... | (70) | 3 hours |
| Electrical Engineering Laboratory EE23..... | (71) | 4 hours |
| Economics 2..... | (65) | 3 hours |
| Electives..... | (105) | 3 hours |
| Seminar EE13..... | (71) | 1 hour |

 Total 17 hours
Second Semester

| | | |
|---|-------|---------|
| Thermodynamics ME4..... | (69) | 3 hours |
| Electrical Engineering Theory EE4..... | (70) | 3 hours |
| Electrical Engineering Laboratory EE24..... | (71) | 4 hours |
| Electrical Apparatus Design EE34..... | (72) | 3 hours |
| Electives..... | (105) | 3 hours |
| Seminar EE14..... | (71) | 1 hour |

 Total 17 hours
B. S. in Chemistry Course**Freshman Year***First Semester*

| | | |
|-----------------------------|--------------|---------|
| Mathematics I..... | (83) | 6 hours |
| Drawing GE3..... | (59) | 2 hours |
| Chemistry 1b, 2, 3, 4..... | (50, 51, 52) | 3 hours |
| French I..... | (89) | 5 hours |
| or | | |
| German I..... | (88) | 5 hours |
| or | | |
| Spanish I..... | (90) | 5 hours |
| English I..... | (74) | 3 hours |
| Physiology and Hygiene..... | (81) | 1 hour |

 Total 20 hours
Second Semester

Studies of first semester continued

One credit hour throughout the year is required in Gymnastics

Sophomore Year*First Semester*

| | | |
|--------------------|------|---------|
| Physics I..... | (85) | 5 hours |
| Mathematics 2..... | (84) | 5 hours |

| | | |
|------------------------|--------------|---------|
| French 2..... | (89) | 5 hours |
| or | | |
| German 2..... | (88) | 5 hours |
| or | | |
| Spanish 2..... | (90) | 5 hours |
| History 3..... | (80) | 2 hours |
| Chemistry 2, 3, 4..... | (50, 51, 52) | 4 hours |

Total 21 hours

Second Semester

Studies of first semester continued

Junior Year

First Semester

| | | |
|--------------------|------|---------|
| Mechanics ME1..... | (69) | 4 hours |
| Mathematics 3..... | (84) | 3 hours |
| Biology 4..... | (49) | 3 hours |
| Physics 2..... | (86) | 3 hours |
| Psychology 1..... | (93) | 3 hours |
| Chemistry 5..... | (54) | 4 hours |

Total 20 hours

Second Semester

| | | |
|--------------------|------|---------|
| Mechanics ME2..... | (69) | 5 hours |
| Mathematics 3..... | (84) | 3 hours |
| Physics 2..... | (86) | 3 hours |
| Psychology 1..... | (93) | 3 hours |
| Chemistry 5..... | (54) | 6 hours |

Total 20 hours

Senior Year

First Semester

| | | |
|--|------|---------|
| Physics 3..... | (87) | 3 hours |
| Economics 1..... | (65) | 3 hours |
| Mathematics 4..... | (84) | 3 hours |
| or | | |
| Geology 4..... | (77) | 3 hours |
| Chemistry 5..... | (54) | 6 hours |
| Modern Physical Theories, Physics 4..... | (87) | 1 hour |
| Research, Chemistry 6..... | (55) | 3 hour |

Total 19 hours

Second Semester

| | | |
|------------------|------|---------|
| Physics 3..... | (87) | 3 hours |
| Economics 1..... | (65) | 3 hours |

| | | |
|---------------------------------|------|----------|
| Mathematics 4..... | (84) | 3 hours |
| or | | |
| Geology 4..... | (77) | 3 hours |
| Chemistry 5..... | (54) | 6 hours |
| Electron Theory, Physics 5..... | (87) | 1 hour |
| Research, Chemistry 6..... | (55) | 3 hours |
| | | <hr/> |
| Total | | 19 hours |

Pre-Medical Course

Freshman Year

First Semester

| | | |
|-----------------------|----------|----------|
| Biology 1..... | (48) | 4 hours |
| Chemistry 1a, 2a..... | (50, 51) | 5 hours |
| French 1..... | (89) | 5 hours |
| or | | |
| German 1..... | (88) | 5 hours |
| or | | |
| Spanish 1..... | (90) | 5 hours |
| Mathematics 1a..... | (83) | 4 hours |
| English 1..... | (74) | 3 hours |
| | | <hr/> |
| Total | | 21 hours |

Second Semester

Studies of first semester continued

One credit hour throughout the year is required in Gymnastics

Sophomore Year

First Semester

| | | |
|----------------------|------|----------|
| Biology 2..... | (49) | 4 hours |
| Chemistry 3a, 4..... | (52) | 4 hours |
| Physics 1a..... | (86) | 4 hours |
| French 2..... | (89) | 5 hours |
| or | | |
| German 2..... | (88) | 5 hours |
| or | | |
| Spanish 2..... | (90) | 5 hours |
| English 2..... | (74) | 3 hours |
| Rhetoric 1..... | (94) | 1 hour |
| | | <hr/> |
| Total | | 21 hours |

Second Semester

Studies of first semester continued

ATTENDANCE AND STANDING

Registration. Every student must report at the registrar's office at the beginning of each semester and register his college or local address.

Any change of residence during the semester must be reported at once at the registrar's office.

Changes of Course. Students are not permitted to pass from one course to another, or to take any studies out of their regular order, without the specific authorization of the dean of students.

Chapel. Morning worship is held in the chapel every college day and attendance is required of all students.

Reports. A daily record of scholarship and of attendance at class and chapel is kept and a report is sent at the close of each semester to the student's parent or guardian.

Standing. There are four grades of scholarship:—from 9 to 10 inclusive, first grade; from 8 to 8.9, second grade; from 7 to 7.9, third grade; from 6 to 6.9, fourth grade.

A student who receives a mark of 4 to 5.9 is reported as conditioned; below 4, as having failed.

A student who is reported as having failed in any subject must take that subject again in class; or he may be required to make up the subject under an approved tutor, in such manner as the dean of students, after consultation with the department, may designate, and to pass an examination in it at the second conditions examination after the imposition of the mark of failure.

Students of exceptional standing in scholarship, not exceeding ten in number, are eligible for selection by the faculty for stage appointments at graduation.

Credits. A credit is the valuation of each semester hour of work according to the mark gained. Each semester hour of "first grade" work counts five credits; of "second grade" work, three credits; of "third grade" work, two credits; of "fourth grade" work one credit.

The index number for any student is obtained by dividing his total number of credits by his total semester hours.

To remain in college a student must obtain for each semester

a number of credits equal to 1.5 times the total number of his semester hours. Fifty per cent of the work of each student must average a third grade to establish the minimum number of credits for any semester.

In determining credits, one credit will be added for each ten points between grades.

In exceptional cases, such as protracted illness, a student who by removing conditions is able to obtain the minimum number of credits may be placed on probation for a semester.

Scholarly Honors. At the end of each semester scholarly honors are awarded formally to students in each course who attain an average first grade in all subjects on their schedules, provided that no subject fall below a second grade.

Absences in General. Absences are entered against a student from the beginning of a semester until he reports his return to the registrar.

It is expected that for consecutive absences permission will be obtained in advance.

Permissions and excuses are given only by the dean of students.

Application must be made between 3 and 5 P. M. on the first Monday following the date of the absence.

Class-room Absences. Attendance at all exercises is required and it is expected that no student will be absent except in case of unavoidable necessity.

No excuse remits any college work. The work lost by reason of excused absence must be made up in a manner satisfactory to the head of the department concerned, unless the nature of the work renders this impossible, in which case the student's grade will suffer.

After a number of unexcused absences in excess of one week of recitations in any subject, or after a number of unexcused and excused absences in excess of two weeks of recitations in any subject, a student is not allowed to continue his work in that subject but must take it with the succeeding class.

In exceptional cases a student may be reinstated in any subject on permission of the dean of students.

Each absence from class on days immediately preceding or

following a recess and each participation in any concerted class absence ("bolt") is counted as one week's absence.

Holders of scholarly honors are exempt from the above rules on absences.

Chapel Absences. Eighteen absences without excuse are allowed each semester. All absences after the first eighteen lower the standing at the rate of one unit for every two absences.

No absences are excused except for protracted illness or for reasons in every way exceptional.

Applications for excuse from chapel for a semester must be made to the dean of students within the first two weeks of that semester.

In the determination of a student's general standing, marks for chapel attendance are counted as the equivalent of a one hour per week recitation. They affect the granting of scholarships and the selection of honor men.

Conditions. If entrance conditions are allowed, they must be made up promptly at the time appointed. Students who have any entrance conditions remaining after the April examinations, are classed as irregular students. Those who fail to remove all entrance conditions before the beginning of the next college year will not be admitted to any of the work of that year. No student who has any conditions unsatisfied at the close of the conditions examinations in September at the opening of the college year, is permitted to continue with his class without the express authorization of the dean of students.

Conditions not removed at the next conditions examination held after their imposition must be made up in class at the first opportunity, and this work takes precedence of the regular work in case of conflict in the schedule. No senior who has failed to make up all his back work by the end of the first semester of senior year can be recommended for a degree.

Examinations for the removal of conditions occur on the Saturday next preceding the opening of the first semester, and in April, on dates indicated in the college calendar. Registration for these examinations closes at 12 M. on the Saturday next preceding the date set for each. A fee for each examination to

be taken must be paid at the time of registration, at the registrar's office.

Students who have been excused by the dean of students from any semester examination are reported "Not examined" and may be examined later, at a time to be approved by the instructor, but such examination cannot be postponed beyond the first conditions examinations after such report. A failure to pass is regarded as a condition and must be made up at the next following conditions examination.

Unless excused by the dean of students, students absent from semester examinations are reported as "Not sustained," or "Failed."

Absence from any appointed examination is regarded as a failure, unless previously excused.

Irregular Students. Students who are seriously deficient in standing may be dropped to a lower class, or, if the deficiency is such as to leave a prospect of regaining class standing, may be rated as irregular students. Irregular students have no class relation or class privilege; they are debarred from competition for prizes and from the attainment of special honors.

The evidence that a student's continuance in college is resulting in no advantage to himself, or in harm to others, will occasion his separation from the institution.

EXPENSES

| | |
|--|----------------|
| Registration fee | \$ 5.00 |
| Total charge, A. B. courses, per year..... | 150.00 |
| Total charge, pre-medical course, per year..... | 250.00 |
| Total charge, chemistry course, per year..... | 250.00 |
| Total charge, civil engineering course, per year..... | 250.00 |
| Total charge, electrical engineering course, per year..... | 250.00 |
| Graduation fee, including diploma..... | 15.00 |
| Graduate courses in engineering and chemistry, per year.. | 100.00 |
| Room rent in dormitories, per year..... | \$80 to 100.00 |
| Conditions examination fee..... | 2.00 |
| Extension courses, each subject..... | 15.00 |

In the course leading to the degree of Doctor of Philosophy the maximum payment is \$300 if the degree be earned in five years from the time of registration.

One-half of the total charge is due in advance on the first day of each semester. Freshmen who pay by check must present certified or cashier's check, or New York draft. *No bills are sent.*

Students must conform to the rules of the treasurer's office regarding registration at the opening of each semester, and are not admitted to any classes or laboratories until the total charge is paid. An extra fee is imposed for late registration.

No deductions are made because of absence from college.

No part of a semester bill is refunded for any cause.

Damage done by students to college property is charged to their account.

No degree, certificate, or dismissal is given to any student until his bills are paid.

Board can be procured for \$5 to \$7 a week.

Books and instruments cost from \$30 to \$60 per year.

It is the custom of the student body to levy an annual tax of \$35.00, of which one-half is payable at the time of registration for the first semester and one-half at the time of registration for the second semester. This money is used for the support of the different branches of athletics and other college activities.

College Rooms

The college has three steam-heated dormitories. Most of the rooms are arranged in suites of two; they are rented at prices varying from \$80.00 to \$100.00 per year unfurnished for each student occupying a room. A limited number only are furnished. Students about to enter college who wish rooms in the dormitories should make application to the assistant treasurer by August 20 of the year in which they wish to enter for a list of rooms with location and price. No room is secured until a lease is signed and filed in the college office; a deposit of \$10.00 is required when the lease is filed and this deposit is not returnable unless the lease is cancelled by September 10. A student must occupy the room for which he signs, as transfers are not allowed. The rooms are cared for by competent persons, employed and paid by the college; each occupant of a college room will be held responsible for any damage done to the room. At the end of the college year students giving up their rooms for any reason whatsoever must remove all furniture and property from their rooms not later than the Saturday following commencement day, as after this time the dormitories will be closed until the Saturday before the first registration day of the fall semester. The dormitories are also closed during the Christmas recess.

Students leaving property in their rooms during the vacations do so at their own risk.

Students are required to room in the college dormitories, or if no college rooms are available, in places approved by the college. A list of such rooms may be found at the college office. Students who live at home or with relatives, or who are provided with a room in a private house in return for services rendered are excused from this rule.

Employment Bureau

The registrar's office conducts a bureau with the object of aiding students who desire employment for the purpose of meeting the expenses of a college education. Applications from intending entrants for the assistance of the bureau should be addressed to the secretary of the college.

SCHOLARSHIPS

Funds given especially for this purpose enable the college to offer aid to a number of students each year, as follows:

General Scholarships. General scholarships are available for students in the non-technical courses.

Scholarships covering a part of the tuition charges are granted to students upon the following conditions:

1. The declaration of a purpose to remain in Union College until graduation

2. An acknowledgment that the aid received is regarded as a debt of honor, to be paid as soon as possible after leaving college

3. The presentation of satisfactory evidence of financial need

Scholarship aid is withdrawn temporarily upon the failure of the student to be sustained in any subject, or upon his failure to maintain an average grade of eighty per cent. in the studies of any semester, and after it has been withdrawn for two successive semesters it is not renewed.

Any serious breach of college discipline, evidence of moral delinquency, or repeated unnecessary expenditures will also result in the withdrawal of scholarship aid.

Credentials necessary for admission to another college will not be given to any scholarship student until he has repaid to the college treasury the full amount of scholarship aid received.

Application blanks will be provided by the secretary upon request.

John David Wolfe Memorial Scholarships. The income of a fund of fifty thousand dollars established by the generosity of Miss Catharine Lorillard Wolfe is designed to aid students from the southern states.

These scholarships are available for students in all courses and are governed by the conditions named above.

Application blanks will be provided by the secretary upon request.

Levi Parsons Scholarships. A generous benefaction by the late

Hon Levi Parsons, of Gloversville, N. Y., maintains several scholarships in each class, yielding one hundred and fifty dollars a year each.

Among applicants, preference is given:

First, to blood relatives of the founder, bearing his name and living in the county of Fulton, Montgomery or Hamilton, in the State of New York, and especially to those bearing his name and living in Gloversville or Johnstown, Fulton county.

Second, to applicants living in the following places, according to the following order:

1. The city of Gloversville, Fulton county
2. The city of Johnstown
3. The township of Johnstown
4. The county of Fulton
5. The adjoining counties of Montgomery and Hamilton
6. The blood relatives living in any other part of the United States

Nomination to scholarships is made by the board of directors of the Gloversville Free Library; and the nominees must satisfy the college requirements for admission. Applications are received by the directors of the Gloversville Free Library, Gloversville.

The continuance of these scholarships is subject to the rules stated on page 120 concerning the withdrawal of the general scholarships of the college.

Thomas Armstrong Scholarships. The late Thomas Armstrong, of Plattsburg, N. Y., provided for the grant of five scholarships to residents of Clinton county, sons of practical farmers.

Nominations to these scholarships are made by the board of supervisors of Clinton county, and the yearly value of each scholarship is not to exceed two hundred dollars.

R. C. Alexander Prize Scholarship. The sum of four thousand dollars has been given in memory of the late Robert Carter Alexander, of the class of 1880, and a life trustee of the College, to be devoted to the establishment of a scholarship for the encouragement of classical studies.

The income of this fund, amounting to two hundred dollars

per year, is awarded as a prize scholarship, upon the following conditions:

1. Candidates must be students in the classical course, and of approved moral character.

2. They must be free from conditions and must have obtained an average of at least eighty per cent. in the studies of the first semester of the freshman year.

3. They must pass successfully a special examination at the close of the freshman year in each of the following subjects: Latin, Greek, mathematics, English composition, and either French or German. These examinations will be based upon the work of the freshman year.

4. The award will be made to the candidate obtaining the highest general average in these examinations and in all the previous work of the college course.

5. The prize scholarship will be forfeited upon evidence of moral delinquency, or upon failure to maintain an average grade of ninety per cent. in the work of any subsequent term. The scholarship, once lost, cannot be regained, but will be awarded, upon the above conditions, to a student in the next entering class.

6. All questions pertaining to the administration of this scholarship will be determined by a committee composed of the president of the college, the chairman of the scholarship committee of the faculty, and a member of the board of trustees.

Horace B. Silliman Scholarships. Three scholarships were founded by the late Horace B. Silliman, of the class of 1846, giving to each recipient the income from two thousand dollars annually.

These scholarships are awarded to active members of the college Young Men's Christian Association by a committee composed of the president, the dean of the faculty, and the president of the Young Men's Christian Association, under such rules and conditions as may be determined by such committee, preference being given to students in the classical course.

The award is made to one student annually at the close of the freshman year.

Daniel F. Pullman Scholarship. The late Daniel F. Pullman, of Knox, Albany county, New York, provided in his will for the establishment of a scholarship of the value of \$120 a year, to be given to a student in the classical course.

The award is made by the faculty, and in accordance with the terms of the will preference is given to members of the Methodist Episcopal Church.

Alumni Scholarships. Application for appointment to these scholarships must be made before September 1. The conditions with respect to college standing governing the award and retention of the general scholarships of the college apply to these scholarships also.

Class of 1895 Scholarship. A fund has been given by the class of 1895 which provides for the grant of a scholarship of a yearly value not to exceed one hundred dollars. The award is made by the faculty and, in accordance with the wish of the donors, preference will be given to descendants of members of the class.

Genesee Valley Scholarship. The Alumni Association of the Genesee Valley generously offers a scholarship to residents of towns included in the active membership of the association. Candidates should make application to the secretary of the Alumni Association.

Daniel Vedder Scholarship. By the will of the late Daniel Vedder, of Schenectady, a scholarship has been established, of the annual value of two hundred dollars.

The scholarship is awarded by the faculty, and is given to a student who is preparing to enter the Christian ministry.

The holder must maintain an average standing of ninety per cent., and must pledge himself to abstain from the use of intoxicating liquors and tobacco.

If none of the candidates meets in every respect the conditions stated in the will of the donor, the scholarship will be awarded in such a way as to carry out as fully as possible the wishes of the founder.

The award is made at the end of the freshman year.

Ichabod Spencer Scholarship Fund. This fund is to be used for general scholarship aid, was established by Mrs. Catherine Spencer Leavitt in memory of her father, the Rev. Ichabod Spencer of the class of 1822. The proceeds are used at the discretion of the trustees to aid worthy students in securing an education at Union College.

Law School Scholarships. Applicants for these scholarships, described below, must register with the dean of the faculty by May 15 of senior year.

John K. Porter Memorial Scholarships. A fund given by Mrs. John K. Porter, in memory of her husband, is designed to assist students who, after graduating from college, pursue the study of law. The fund provides, at present, for three scholarships of ninety dollars each. The awards are made at commencement to seniors chosen by the faculty.

Gilbert M. Spier Memorial Scholarship. A fund given by Mrs. Glover C. Arnold, in memory of her father, the late Judge Gilbert M. Spier, provides another scholarship for students of law who go from Union College to the Albany Law School, another department of Union University. The sum of ninety dollars is awarded at commencement to the senior chosen by the faculty, the choice being made on the basis of excellence in historical studies.

William C. Saxton Scholarships. By the will of Anna C. Saxton the sum of ten thousand dollars was bequeathed to Union College for the purpose of founding the William C. Saxton Fund. This fund provides for the payment of the tuition of one student in each of the three classes in the Albany Law School. These students must be graduates of Union College and are appointed, one each year, by the faculty of Union College.

Chester C. Thorne Scholarship. The late Rev. Chester C. Thorne, of the class of 1857, has endowed a scholarship of the annual value of two hundred dollars. The scholarship will be awarded to a student in one of the academic courses at the end of his junior year; it is given on the basis of character and financial need and is awarded by the faculty.

The tenure of the scholarship is subject to the general scholarship rules of the college as published in the annual catalogue.

General Electric Company Scholarships. The General Electric Company has made provision for three scholarships, nominations to which are made by the company. One incumbent will be named each year until three scholarships are in effect. The scholarships are intended primarily for the encouragement of electrical engineering studies, but the company may appoint students in any course. The scholarships provide for tuition fees.

American Locomotive Company Scholarship. The American Locomotive Company has provided a fund the income from which is used for one or for two scholarships, as the company may decide. Nominations for the award of these scholarships are made by the company on the basis of the grade of work done by the candidate in school or in college. The scholarships are open to students in any course, but will be awarded only to such candidates as are sons of employees of the company.

Cornelia Veeder Scholarship. By the will of Miss Cornelia Veeder, the sum of four thousand dollars is given to Union College, the income "to be expended annually in the support and education of some poor and worthy student in said college." The award is made by the faculty.

The tenure of the scholarship is subject to the general scholarship rules of the college as published in the annual catalogue.

William L. Oswald Scholarship. A fund of five thousand dollars is provided by the will of William L. Oswald, the income from which is to be applied to "the support and education of a young man of proper character and habits for the duties and calling of a minister of the Gospel, a candidate of suitable qualifications residing in Watervliet, N. Y., to be preferred." The award is made by the faculty.

The tenure of the scholarship is subject to the general scholarship rules of the college as published in the annual catalogue.

Fuller Medical Scholarships. The late Dr. Robert M. Fuller of Schenectady bequeathed a fund to the college, the income of

which is divided into ten scholarships, awarded to students in the Albany Medical College who have taken their pre-medical courses in Union College. By the terms of the bequest, the committee of award consists of the President, the Dean of the Faculty of Union College, and the Dean of the Albany Medical College. These scholarships are given to those students who have shown, while in Union College, general mental and physical fitness for the work of the medical profession, and who have excelled in chemistry courses.

Five of the scholarships are reserved for those students who, at the time of entering the Medical College, have received or are candidates for a bachelor's degree from Union College, and preference will be given to such students in all awards on this foundation. Five may be awarded to students who have completed the two years pre-medical course.

The Charles B. McMurray Scholarship. A fund of \$5,000 has been given by Mr. Charles B. McMurray, a trustee of the College, the income of which is to be granted to a student in any of the four-year courses (or the pre-medical course) at Union College, on condition of his meeting the requirements made by the College for its general scholarships.

In awarding this scholarship preference is given first, to candidates having been graduated from the Lansingburgh High School; second, to candidates living in the city of Troy, New York; and third, to candidates living in Rensselaer County, New York.

PRIZES

The following prizes are awarded from funds given especially for this purpose:

Blatchford Oratorical Medals. The Hon. Richard M. Blatchford, LL. D., of New York city, founded oratorical prizes, consisting of two gold medals of the value of the interest on \$1,000, which are given to the two members of the graduating class who deliver at commencement the best orations, "regard being had alike to their elevated and classical character and to their graceful and effective delivery." These medals are awarded by a committee appointed by the trustees, and are presented at the close of the exercises.

Warner Prize. The Hon. Horatio G. Warner, LL. D., of Rochester, N. Y., founded an annual prize to be presented at commencement to the "graduate of Union College, classical or Latin-scientific course, who shall reach the highest standing in the performance of collegiate duties, and also sustain the best character for moral rectitude and deportment, without regard to religious practice or profession." The prize is a silver cup and is awarded by the faculty.

Ingham Prize. The Hon. Albert C. Ingham, LL. D., of Meridian, N. Y., founded an annual prize of the interest of \$1,000 (in the form of plate, or medal, or money, or both medal and money, as preferred), to be awarded at commencement to that senior connected with the college for not less than two years who shall offer the best essay on one of two assigned subjects in English literature or history.

The essay must be typewritten, and must contain not less than 4,000 nor more than 4,500 words. Its signature (fictitious) and the writer's real name must be enclosed in a sealed envelope; the signature and the name of the prize being given on the outside. The essay, with the note, must be presented by noon on the first day of May.

Allen Essay Prizes. The Hon. William F. Allen, LL. D., of Oswego, N. Y., established a fund of \$1,000, the interest of which

is devoted to prizes for the best three essays on any subject, submitted by members of the senior class.

The essay must be typewritten, and must contain not less than 2,500 nor more than 3,000 words, and must be signed and presented (with note, as in the case of the Ingham essay) by noon on May 1st. The prizes are awarded at commencement.

Oratorical Prizes. Prizes are presented at commencement to the two juniors and the two sophomores who deliver the orations best in composition and delivery on the occasion of prize speaking in commencement week. Four juniors and four sophomores are selected for this competition by a committee of the faculty on the fifteenth of April. Candidates must be in full standing on appearance before the committee.

Allison-Foote Prizes. Mr. George F. Allison, of New York city, and the late Wallace T. Foote, of Port Henry, N. Y., founded a prize for the encouragement of debate in the literary societies. The prize consists of \$100 in cash, and is awarded as the result of a public competition between representatives of the Adelphic and Philomathean Literary Societies. Fifty dollars is awarded to the society presenting the strongest argument. The remaining \$50 is awarded to the debater who makes the best single speech, regardless of his society relations. Contestants must have engaged in at least ten debates in their respective societies during the college year immediately preceding. All further details are left to the determination of a committee, consisting of the president, the dean of the faculty, and the professor of rhetoric.

Goodrich-Duane Prizes. Two prizes, of \$30 and \$20, are awarded to the best speakers in an extemporaneous debate held in commencement week in each year. A general topic is previously announced, and the particular subject of debate is given on the evening of the contest. The competition is open to students of all classes.

The first prize is given by Mr. James A. Goodrich, of the class of 1879, and the second prize by Dr. Alexander Duane, of the class of 1878.

Daggett Prize. In 1899 Miss E. Josephine Daggett bequeathed

to Union College the sum of \$1,000, the interest of which is devoted to a prize for conduct and character, without respect to scholarship, to be given at Commencement to a senior who shall have passed through a full course of four years at the college.

Bailey Prize. A silver cup, of the value of \$50, has been offered by Dr. Frank Bailey, to be awarded annually to that member of the senior class who has rendered the greatest service to the college in any field. In awarding this prize, consideration is given to any effort resulting in conspicuous improvement in the conduct of athletic sports or in the character of undergraduate publications; in the increase of college enthusiasm or the elevation of the tone of college life; in the advancement of the interests of the college among preparatory schools or in the community as a whole; or in any addition to those things which bring honor to the name of Union.

Pullman Prizes. Mr. Daniel F. Pullman, of Knox, Albany County, New York, bequeathed to Union College the sum of \$2,000 to found two annual prizes.

The Pullman Classical Prize. This prize of \$40 is given to that member of the Methodist Episcopal Church in the graduating class who, in an attendance of three years, has attained the highest standing in scholarship in the classical course.

The Pullman Engineering Prize. This prize of \$40 is given to that member of the graduating class who has taken the full course in the engineering department and who has attained the highest standing in that course, preference being given to members of the Methodist Episcopal Church.

Van Orden Prize. The Van Orden Prize was founded by the late Wessel Ten Broeck Van Orden in memory of his uncle, Wessel Ten Broeck Van Orden, of the class of 1839. It is awarded annually to a member of the freshman class for excellence in English composition. The basis of the award is the class work in rhetoric and composition, and a special essay. The essays are based upon certain works of English literature, the titles of which are announced early in the fall. The prize is the interest on \$1,000, and is awarded partly in books and partly in money.

Freling H. Smith Prize in History. Mr. Freling H. Smith, of the class of 1865, has founded an annual prize of fifty dollars in the department of history. The prize is awarded at commencement and is open to seniors who are qualified to take special honors in history. The award is based upon a thesis written under the direction of the department of history. Candidates must register with the head of the department not later than November 1.

Underclass Debate Prize. A prize of \$10 is awarded to the member of either debating team in the Sophomore-Freshman debate who makes the best single speech, regardless of class victory.

Ernst J. Berg Scholarship Cup. A silver cup is offered by Dr. Ernst J. Berg, to be awarded at the opening of the fall term, to that fraternity or like organization whose scholarship during the preceding year was highest.

Fuller Prizes in Chemistry. In 1914 Dr. Robert M. Fuller, of Schenectady, N. Y., founded two prizes, consisting of a silver, and a gold medal, of the value of twenty dollars and thirty dollars respectively. These medals are awarded annually; the silver medal to that member of the sophomore class whose work of the first two years in the department of chemistry has given the greatest promise of a successful career in that subject; the gold medal to that member of the senior class whose standing in the department has been of high grade, and who has shown the most ability in original experimental work. The medals are awarded by a committee composed of the president, the professor of chemistry, and one other member of the faculty appointed by the president.

Gilbert-Cook Prize in Poetry. This is a prize of \$25.00 offered yearly for the best poem submitted by an undergraduate of the college. The poem may be of any kind and of any length, except that it may not be didactic or inspirational, nor less than three lines in length.

Any number of poems may be submitted. All poems must be

signed by an assumed name and accompanied by an envelope containing the assumed name and the real name of the writer.

The judges give equal consideration to the qualities of poetic feeling and form.

Sternfeld Philosophical Prize. In 1920 Mrs. Bertha Hymes Sternfeld of Albany, N. Y., established a fund of \$1000, the interest of which is devoted to an annual prize for the best original essay in philosophy. The gift is in memory of Mrs. Sternfeld's son, Milton Hymes Sternfeld, of the class of 1916.

All students who by the beginning of their senior year have credit for two semesters of high grade work in philosophy, are declared by the head of the department of philosophy eligible to compete. The essay must be typewritten, contain not less than 3000 nor more than 5000 words, and be presented by noon on May 1st. Essays offered in the regular courses of the department are admissible. The winner is selected by a committee appointed by the president of the college, and the prize is awarded at Commencement.

When there are no students eligible to compete or when the judges find no essay worthy of the prize, the income for the year is used to purchase books for the department of philosophy.

Archibald High Scholarship Prize. By the terms of the gift, this is known as the Archibald High Scholarship Prize, a fund established by the Reverend Andrew W. Archibald, D. D., of the class of 1872. The annual net income from the fund, given in bonds of the par value of \$1500.00, is awarded each year to that member of the graduating class who has been four years in attendance in the college and has attained the highest standing in the classical course.

DEGREES AND HONORS

The candidate for a degree must have paid all dues to the college treasurer, and returned all books borrowed from the college library; he must also attend the conferring of degrees, or be expressly excused therefrom. The candidate for a bachelor's degree must have entered college not later than the beginning of the first semester of senior year.

Degrees for Resident Study

The degrees of the college are conferred by authority of the board of trustees upon candidates who have successfully completed courses of resident study, as follows:

The Bachelor's Degree. The degree of Bachelor of Arts (A. B.) is conferred upon candidates who have successfully completed Course 1, A or B, page 30; the degree of Bachelor of Science (B. S.), for members of the classes of 1922, 1923, 1924, upon those who have successfully completed Course 1, C, D, or E, page 30; the degree of Bachelor of Science in Civil Engineering (B. S. in C. E.), upon those who have successfully completed Course 2, page 30; the degree of Bachelor of Science in Electrical Engineering (B. S. in E. E.), upon those who have successfully completed Course 3, page 31; the degree of Bachelor of Science in Chemistry (B. S. in Ch.), upon those who have successfully completed Course 4, page 31.

BEGINNING WITH THE CLASS OF 1925 the degree of Bachelor of Arts (A.B.) will be conferred on all candidates who successfully complete one of the academic courses, save as special application and elections are made for the B.S. degree, as explained on pages 30 and 105.

The Master's Degree. The degree of Master of Science in Civil Engineering (M. S. in C. E.) is conferred upon candidates who have successfully completed Course 6, first division, page 31; the degree of Master of Science in Electrical Engineering (M. S. in E. E.), upon those who have successfully completed Course 7, second division, page 31; the degree of Master of Science in Chemistry (M. S. in Ch.), upon those who have successfully completed Course 6, third division, page 31.

The Doctor's Degree. The degree of Doctor of Philosophy (Ph. D.) is conferred upon students of electrical science who fulfill the requirements stated on pages 73-74.

Professional Degrees

The following degrees may be conferred upon graduates of Union College who meet the requirements specified below:

Engineering Degrees. Graduates of Union College in the civil and sanitary engineering courses may become candidates for the degree of Civil Engineer (C. E.); graduates in the course of electrical engineering may become candidates for the degree of Electrical Engineer (E. E.).

The candidate, after the completion of his undergraduate course, must have been engaged for at least three years in professional engineering work of a high order and in positions favorable to the acquisition of valuable engineering experience and to the development of professional ability and judgment.

If the candidate's professional experience is found adequate in character and amount, he is required to submit a satisfactory thesis on an approved subject embodying a contribution by himself to engineering knowledge or literature.

If the thesis is found satisfactory the candidate may be called before an examining committee selected by the department in which he is a candidate and must satisfy the committee that his training, experience, judgment, and ability are such as to warrant the conferring of the degree.

If, in the opinion of the head of the department concerned, the candidate has satisfactorily met the above requirements he may be recommended for his degree, to be conferred by the trustees at the following commencement.

The diploma fee for this degree is \$10.

Honors

All commencement prizes are limited to students who have entered at or before the beginning of the senior year, and who are in full standing at the close of the first semester; and to engineering students entered likewise and in full standing

at the close of the first semester, in both the engineering course and the English department of the B. S. courses.

Commencement Appointments. These honors may be assigned to ten seniors, as stated under Standing, page 114. Provisional appointments are made at the close of the first semester of senior year, and become final if those who receive them retain the same relative rank to the end of their course. Under present regulations, no other person can become competitor for the Blatchford Oratorical Medals.

Seniors not in full standing at the close of the first semester are ineligible to a Commencement appointment.

Students who receive Commencement appointments as the result of the second semester's work are excused from speaking unless the faculty direct otherwise.

The Valedictory. This honor is awarded to the senior of highest standing among the ten receiving Commencement appointments.

Special Honors. Special honors are also given at graduation under the following conditions: Any department may offer a course, approved by the voting faculty, leading to special honors. The head of a department may direct the choice of electives in other departments, for honor students, to the number of six hours in each year. The time of registration for honors will be determined separately for each department. The candidate for special honors must have attained in all the studies of the department in which he tries for honors a rank of not less than ninety per cent. of the maximum. The evidence that he has successfully completed the extra course prescribed for him must be submitted not later than June 1st of the senior year to the faculty, who shall decide in each case whether the work is worthy of an honor. The honors attained are stated in the diploma, and the names of the students who take honors are printed on the Commencement programme. No student may try for honors in more than two departments.

Scholarly Honors. These honors, bearing the names of promi-

nent scholars, associated with Union College, as given below, are awarded in accordance with the rule stated on page 115.

Academic Courses, A and B.....Taylor Lewis Honor
 Academic Courses, C, D, and E....Lewis Henry Morgan Honor
 Civil Engineering Course.....Frederick R. Hasler Honor
 Electrical Engineering Course.....Joseph Henry Honor
 B. S. in Chemistry Course.....Charles F. Chandler Honor
 Pre-Medical Course.....Joseph Price Honor

Phi Beta Kappa. At the beginning of the second semester of the senior year, one-third of the members of the graduating class in the classical course, candidates for the degree of Bachelor of Arts, may be elected to membership in the Phi Beta Kappa society. The election is based upon scholarship and character and is given, as a rule, to the men who stand highest in scholarship in their class.

The Alpha of New York chapter was established in 1817; and ever since that time election to the society has been one of the highest distinctions to be gained by scholarship.

Sigma Xi. Election to the honorary scientific society of Sigma Xi is one of the honors open to seniors of marked ability in the scientific and engineering departments. Membership is confined to the faculty, graduate students, senior candidates for graduation, and alumni. The election occurs during the latter part of the senior year and selections are made on the basis of high general scientific or engineering ability and particularly as a mark of promise of ability in research and independent work.

The society was founded at Cornell University in 1886 and has chapters at thirty-three leading colleges, universities, and research institutions of the country. The Union chapter was established in 1887, since which time about one hundred members have been elected by this chapter.

DEGREES CONFERRED
AT THE
ONE HUNDRED AND TWENTY-FIFTH ANNUAL
COMMENCEMENT
JUNE 13, 1921

Honorary

L.L. D.

John William Davis.....New York City
 Nathan Lewis Miller.....Albany
 James Rowland Angell.....New Haven, Conn.
 Thomas William Lamont.....New York City

D. D.

John Brewster Hubbs.....Geneva
 William Herman Hall.....Beirut, Syria

L. H. D.

Benjamin Henry Ripton.....White Plains
 Arthur Silas Wright.....Cleveland, Ohio
 John Myers Furman.....Tarrytown-on-Hudson

M. A.

Maude AdamsNew York City
 Freling H. Smith.....New York City

In Memoriam

B. S.

George Laverack Frisbee.....Hamburg, N. Y.
 (As of the Class of 1920)

War Degrees

A. B.

Harold Lewis Cook.....Cambridge, England
 (As of the Class of 1918)

Arthur Buckingham Dougall.....Binghamton
(As of the Class of 1919)

John Bassnett Hoppe.....Arlington
(As of the Class of 1920)

B. S.

Guy Hamilton Beckett.....Ralston, Neb.
John Frederick Behnken.....Jeffersonville
W. Gibson Cary, Jr.....New York City
Philip Smith Dorlon, Jr.....Niagara Falls
Wendel George Fallis.....Gloversville
Leonard Harrison Frasier.....Camp Knox, Kentucky
Elmer Newton Howard.....Bartlett, N. H.
Kenneth William Stillman.....Argyle
Clarence O. Anderson.....Brookline, Mass.
(As of the Class of 1918)

Russell Erwin Bellinger.....Herkimer
Law W. Bowman.....Marvel, Alabama
Edwin Winchester Bradford.....South Gardner, Mass.
Ernest M. Gloeckner.....Detroit, Mich.
Edmund Judson Griswold.....Slingerlands
Michael Marian Kolodziej.....Boston, Mass.
Robert Nelson Landreth.....Chicago, Ill.
William Bruce May, Jr.....New York City
Leon Schuyler McGarty.....Akron, Ohio
Leo Laurence Frees.....Schenectady
(As of the Class of 1919)

Frederick Aldhous Vernon.....Schenectady
William James Smith.....Binghamton
(As of the Class of 1920)

In Course

M. A.

Ross Williams Tiffany.....Cambridge

M. S. in C. E.

Earl Devendorf.....Schenectady

M. S. in E. E.

| | |
|-------------------------------|-------------------|
| Ellsworth DeWitt Cook..... | Scotia |
| Robert Ernest Doherty..... | Scotia |
| Ivar Herlitz | Stockholm, Sweden |
| Henry Van de Vere Putnam..... | Barker |
| DeWitt Smith Snell..... | St. Johnsville |

B. A.

| | |
|---------------------------------|-----------|
| Charles Hedrick Hummer, Jr..... | Ravena |
| (As of the Class of 1916) | |
| Frank Rollin McAllester..... | Lake View |
| (As of the Class of 1920) | |

B. S.

| | |
|-------------------------------|-----------------|
| John J. Beattie..... | Glens Falls |
| John Warden McCauley, Jr..... | Cleveland, Ohio |
| John Barnaby Still..... | Schenectady |
| Hunter Adaline Towne..... | Duluth, Minn. |
| (As of the Class of 1918) | |
| Harold Randolph Baird..... | Amsterdam |
| (As of the Class of 1919) | |
| Wolcott Leonda Jones..... | Albany |
| (As of the Class of 1920) | |

B. S. in C. E.

| | |
|------------------------------|-----------------|
| LeRoy Bailey..... | Schenectady |
| (As of the Class of 1918) | |
| Ernest Christman..... | Schenectady |
| Walker Bevins Lounsbery..... | Randall |
| (As of the Class of 1919) | |
| Abram Clark..... | Gloversville |
| Seymour Rolph Smith..... | Oakville, Conn. |
| (As of the Class of 1920) | |

B. E.

| | |
|------------------------------|-----------------|
| Charles Sheldon Hubbard..... | Bayshore, L. I. |
| (As of the Class of 1911) | |

B. S. in E. E.

Benjamin Frank Hance.....Ogden, Utah
 Earl Lester Newell.....New York City

(As of the Class of 1918)

Frederick De Peyster Townsend.....Negaunee, Mich.

(As of the Class of 1919)

Louis Sullivan Cusato.....Schenectady

Earl Victor Mace.....Keeseville

Vincent Allen Sheals.....Brushton

(As of the Class of 1920)

Class of 1921**A. B.**

George DeWitt Allison.....Brooklyn

Bryan Laurence Carpenter.....Schenectady

Hanford Hillman Closson.....Schenectady

Stanford Stillman Closson.....Schenectady

Leo Chester Freedman.....Springfield, Mass.

Hobart Frederick Goewey.....West Chazy

Marshall Hawkes.....Waverly

Arthur Ward Hendrickson.....Queens

Leslie Webber Jones.....Schenectady

Edwin Oliver Kennedy.....Johnstown

George Edward McDonald King.....Schenectady

John Doyle Tracy.....Amsterdam

Raymond Gillespie Walker.....Greene

John Herbert Wemple.....Schenectady

Ph. B.

Stanley Stern Joseph.....Schenectady

B. S.

Lowell Lloyd DeGroot.....Albany

DeWitt G. Dewey.....Schenectady

Elton Robert Dickson.....Hoosic Falls

Bradford Dalton Divine.....Utica

| | |
|----------------------------------|--------------------|
| John Wesley Eddy..... | Saratoga Springs |
| Warren Sears Gale..... | Newburgh |
| Wesley Adam Getman..... | Gloversville |
| Robert Douglas Gregory..... | Poughkeepsie |
| Theron Carter Hoyt..... | Albany |
| William Proudman Husted..... | Albany |
| Montgomery Burkin Hulsapple..... | Albany |
| Gordon Park James..... | Albany |
| Crawford McChesney | Schenectady |
| Robert Allen Notman..... | Springfield, Mass. |
| Donald Francis O'Brien..... | Fulton |
| Ralph Alonzo Peters..... | Schenectady |
| Harry Albert Reoux..... | Warrensburgh |
| John Michael Reynolds..... | Fulton |
| Ormonde Lyndon Rolls..... | Saratoga Springs |
| John James Rooney..... | Albany |
| David Winne Sherwood..... | Ballston Spa |
| Edgar William Snell..... | Schenectady |
| Paul Hopkins Stevens..... | Newark |
| Alexander Stewart..... | Rochester |
| William Henry Tregurtha..... | Schenectady |
| John Earle Vaughn..... | Fort Ann |
| Edward Gilbert Walsh..... | Schenectady |

B. S. in C. E.

| | |
|----------------------------------|----------------------------|
| Richard Montgomery Allerton..... | Brooklyn |
| George Metcalfe Bostock..... | Schenectady |
| George Wayland Carpenter..... | Saratoga Springs |
| Morris Mandel Cohn..... | Schenectady |
| John Luther Davis..... | Erie, Pa. |
| Antonio Louis Ippolito..... | Sao Paulo, Brazil |
| Abraham Jose Williams..... | Choluteca, Honduras, C. A. |

B. S. in E. E.

| | |
|-----------------------------------|----------------|
| Malur Laxminarasimha Annappa..... | Hassan, India |
| Douw Frisbie Beekman..... | Middleburgh |
| Ralph Decker Bennett..... | Williamson |
| Arthur Hamilton Blackburn..... | Danbury, Conn. |

| | |
|--------------------------------|------------------|
| George William Brucker..... | Schenectady |
| Bangalore Narayana Das..... | Bangalore, India |
| Frederick L. Ganter..... | Watertown |
| Homer Pershing Goff..... | Thornburgh, Pa. |
| Henry Irving Halpert..... | Brooklyn |
| Howard Arnold Hendrickson..... | Chatham |
| Charles Manser Hendry..... | Rye |
| George Hughes..... | Flushing |
| Harold Jaeger..... | Brooklyn |
| Joseph Francis Manion | Ferndale |
| Robert Phillips McClellan..... | Nassau |
| James Louis McMurray..... | Wildwood, N. J. |
| Nerses Partikian..... | New York City |
| Joseph Wendell Putnam..... | Schenectady |

B. S. in Ch.

| | |
|-------------------------------|----------------|
| Guy Bartlett..... | Utica |
| Rudolph Albert Schatzel..... | Schenectady |
| Thomas Hoyt Wilber..... | Schenectady |
| Anthony Casimere Zachlin..... | Reading, Penn. |

AWARDS 1921

Commencement Appointments

| | |
|-----------------------------------|------------------|
| Leslie Webber Jones..... | Schenectady |
| Bryan Laurence Carpenter..... | Schenectady |
| George Edward McDonald King..... | Schenectady |
| Ralph Decker Bennett..... | Williamson |
| Hobart Frederick Goewey..... | West Chazy |
| Malur Laxminarasimha Annappa..... | Hassan, India |
| Edwin Oliver Kennedy..... | Johnstown |
| George Wayland Carpenter..... | Saratoga Springs |

Commencement Orators

| | |
|-------------------------------|-------------------------------------|
| Edwin Oliver Kennedy..... | A Philosopher and a Principle |
| Hobart Frederick Goewey..... | An Active Social Conscience |
| Bryan Laurence Carpenter..... | A Pin in the Candle |
| Leslie Webber Jones..... | Valedictory — Light Out of Darkness |

Valedictory

Leslie Webber Jones

Prizes

Blatchford Oratorical Medals. 1st, Bryan Laurence Carpenter; 2nd, Leslie Webber Jones.

Warner Prize. Leslie Webber Jones.

Ingham Prize. Bryan Laurence Carpenter and Leslie Webber Jones.

Allen Essay Prize. Edgar William Snell.

Prizes for Oratory. Junior, Edward Becker Horning, Ralph Kingsley Chase; Sophomore, Edward Hubert Cashion, Geoffrey Arthur Mottsmith.

Allison-Foote Prizes. Won by the Adelpic Society and Harold Isaac Blessing.

Goodrich-Duane Prize. Harold Isaac Blessing, Edgar William Snell.

Daggett Prize. Homer Pershing Goff.

Bailey Prize. Ralph Decker Bennett.

Pullman Prizes. Classical, Hobart Frederick Goewey; Engineering, Ralph Decker Bennett.

Van Orden Prize. Albert Fillis Goodwin.

Freling H. Smith Prize. George Edward McDonald King.

Ernst J. Berg Prize. The Pyramid Club.

Ernst J. Berg Seminar Prize. Frederick de Peyster Townsend.

Fuller Prizes. Gold medal, Anthony Casimere Zachlin; Silver medal, Harold Niles Rowe.

Donald A. Coulter Memorial Cup. The junior class.

Donald A. Coulter Memorial Prize. Harold Isaac Blessing.

Sternfeld Philosophical Prize. George Edward McDonald King.

Gilbert-Cook Poetry Prize. Edward Fitch Hall.

John K. Porter Memorial Scholarships. Ralph Alonzo Peters, Edgar William Snell, John Michael Reynolds.

Spier Memorial Scholarship. Harry Albert Reoux.

Saxton Memorial Scholarship. George Edward McDonald King.

Robert M. Fuller Medical Scholarships. Philip Louis Forster, Harry Dunham Hunt, Walter Charles Mott, Harry E. Reynolds.

Scholarly Honors, 1st Semester:

Bryan L. Carpenter, '21.....Tayler Lewis Honor

Hobart F. Goewey '21.....Tayler Lewis Honor

Leslie W. Jones '21.....Tayler Lewis Honor

George E. M. King '21.....Tayler Lewis Honor

Malur L. Annappa '21.....Joseph Henry Honor

Ralph D. Bennett '21.....Joseph Henry Honor

Bangalore N. Das '21.....Joseph Henry Honor

Samuel B. Fortenbaugh, Jr., '23

Lewis Henry Morgan Honor

Edward N. Hooker '23.....Tayler Lewis Honor

M. Marshall Cohn '24.....Tayler Lewis Honor

Scholarly Honors, 2nd Semester:

Bryan L. Carpenter '21.....Tayler Lewis Honor

Hobart F. Goewey '21.....Tayler Lewis Honor

Leslie W. Jones '21.....Tayler Lewis Honor

Edwin O. Kennedy '21.....Tayler Lewis Honor
 George E. M. King '21.....Tayler Lewis Honor
 Antonio Ippolito '21.....Frederick R. Hasler Honor
 Domingo Santa-Maria '22.....Joseph Henry Honor
 Edward N. Hooker '23.....Tayler Lewis Honor

Phi Beta Kappa

Bryan Laurence Carpenter George Edward McDonald King
 Hobart Frederick Goewey Leslie Webber Jones
 Edwin Oliver Kennedy

Sigma Xi

Guy Bartlett Ivar Herlitz

| | |
|--------------------------|-------------------------|
| Ralph Decker Bennett | Rudolph Albert Schatzel |
| Antonio Ippolito | DeWitt Smith Snell |
| Domingo Santa-Maria | Thomas Hoyt Wilber |
| Anthony Casimere Zachlin | |

EXTENSION COURSES

NOT CREDITED TOWARD ANY DEGREE

These courses are given in co-operation with the Educational Committees of the General Electric Company and the American Locomotive Company, and are open to employees of the companies and to the general public. Proper high school or technical preparation is required for admission. Each course consists of thirty lessons. The classes meet once each week during the course. Certificates are given for the satisfactory completion of a course.

The following courses are offered, and given in each case when the demand is sufficient:

Mathematics:

| | |
|-----------------------------------|------------|
| Algebra, Analytical Geometry..... | Mondays |
| Trigonometry and Calculus..... | Tuesdays |
| Differential Equations | Wednesdays |

Modern Languages:

| | |
|---------------------------------------|----------|
| French (Elementary) | Mondays |
| French (Continued, Intermediate)..... | Tuesdays |
| German (Scientific) | Fridays |

Public Speaking Mondays

Chemistry, Physics, Geology..... Tuesdays

English, Economics Wednesdays

Psychology, Philosophy Thursdays

Electrical Engineering (Elementary, Advanced)..... Thursdays

Civil and Mechanical Engineering:

Mechanics Mondays

Steam Power Wednesdays

Reinforced Concrete Thursdays

Machine Design, Locomotive Design..... Thursdays

Drafting..... Wednesdays and Fridays

Physiology:

Anatomy and Physiology..... Fridays

Hygiene Wednesdays

American Government Fridays

Courses for Bible Workers.... Mondays, Wednesdays and Fridays

ALBANY MEDICAL COLLEGE

The Albany Medical College was organized in 1838 and incorporated in 1839, in which year its first class was graduated. Pursuant to the Act of Incorporation of Union University in 1873, Union College (Schenectady), the Albany Medical College, Albany Law School, Dudley Observatory and later the Albany College of Pharmacy, united in constituting Union University. Each institution, retaining its own property, was separately managed by its own Board of Trustees. To meet modern requirements for university control and in order to effectuate the provision that the Albany Medical College was the Medical Department of the University, its Trustees in 1915 appointed an Executive Committee of thirteen to control the educational policy of the Medical School, nine members of which are Governors of Union University. Also upon request of the Trustees of the Medical College the Governors of Union University have appointed a similar committee identical in personnel.

The Albany Medical College has the scientific and clinical direction of major and minor services of the Albany Hospital by reason of the fact that the heads of clinical and laboratory departments of the medical school are the heads of corresponding departments in the hospital and its dispensaries. With these changes, the Albany Medical College is prepared to furnish instruction which meets the highest demands of modern medical education.

The Executive Faculty is composed of the Chancellor of the University, the heads of the five major departments of medicine, two special departments and the Dean. The advantage of such a small working faculty is apparent.

The classes are restricted in number in order that the important personal relation between student and teacher may be maintained.

BOARD OF TRUSTEES**President**

EDMUND N. HUYCK

Vice-President

ALDEN CHESTER

Treasurer

ROBERT OLCOTT

Secretary

LUTHER H. TUCKER

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| AMASA J. PARKER | FRANCIS C. PRATT |
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| CHARLES GIBSON | FREDERICK W. KELLEY |
| EDWARD J. HUSSEY | ELLIS J. STALEY |
| CHARLES A. RICHMOND | GERRIT Y. LANSING |
| GEORGE ALEXANDER | BENJAMIN W. ARNOLD |
| EDGAR S. BARNEY | WILLIAM BARNET |
| FRANKLIN H. GIDDINGS | HENRY M. SAGE |
| CHARLES B. McMURRAY | A. PAGE SMITH |

DR. WALTER H. CONLEY, President, Alumni Association

| | |
|---|---------------------|
| HON. JAMES R. WATT, Mayor of Albany | } <i>Ex-officio</i> |
| HON. EDWARD EASTON, JR., Recorder of Albany | |

Executive Committee

| | |
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| ALDEN CHESTER | EDMUND N. HUYCK |
| ROBERT OLCOTT | GEORGE ALEXANDER |
| LUTHER H. TUCKER | EDGAR S. BARNEY |
| AMASA J. PARKER | FRANKLIN H. GIDDINGS |
| CHARLES GIBSON | GERRIT Y. LANSING |
| CHARLES A. RICHMOND | WILLIS R. WHITNEY |

FACULTY

*CHARLES ALEXANDER RICHMOND, D. D., LL. D.
Chancellor of the University

JAMES PETER BOYD, A. B., M. D.
Emeritus Professor of Obstetrics and Diseases of Children

CYRUS STRONG MERRILL, M. D.
Emeritus Professor of Ophthalmology and Otology

Department of Medicine

*HERMON CAMP GORDINIER, A. M., M. D.
Professor of Medicine

*THOMAS ORDWAY, A. M., Sc. D., M. D.
Dean and Associate Professor of Medicine

LEMUEL WHITTINGTON GORHAM, M. D.
Clinical Professor of Medicine

CLINTON BENJAMIN HAWN, M. D.
Clinical Professor of Medicine

JESSE MONTGOMERY MOSHER, M. D.
Clinical Professor of Mental Diseases

ARTHUR SAUTTER, M. D.
Clinical Professor of Dermatology and Contagious Diseases

HENRY LARNED KEITH SHAW, M. D.
Clinical Professor of Pediatrics

ARTHUR BENSON, M. D.
Instructor in Pediatrics

FREDERIC CHARLES CONWAY, M. D.
Instructor in Medicine

ERASTUS CORNING, M. D.
Instructor in Medicine

OTTO A. FAUST, M. D.
Secretary and Instructor in Medicine

NELSON KAUFMAN FROMM, M. D.
Instructor in Medicine

* Member of the Executive Faculty

PERCIVAL W. HARRIG, M. D.
Assistant in Dermatology

WILLIAM KIRK, M. D.
Instructor in Medicine

RICHARD ANDREW LAWRENCE, M. D.
Instructor in Pediatrics

WILLIAM E. LAWSON, M. D.
Instructor in Medicine

CLINTON PRESTON McCORD, M. D.
Instructor in Educational Hygiene

JOSEPH PATRICK O'BRIEN, M. D.
Instructor in Medicine

D. GLEN SMITH
Instructor in Industrial Medicine

FRANK VANDER BOGERT, M. D.
Instructor in Pediatrics

FRANK JOHN WILLIAMS, M. D.
Instructor in Pediatrics

CHARLES KNICKERBACKER WINNE, JR., M. D.
Instructor in Medicine

ALFRED HERMAN DUERSCHNER, M. D.
Assistant in Medicine

WALTER KINGSLEY GRIGG, B. S.
Assistant in Clinical Pathology

GEORGE N. LEONARD, M. D.
Assistant in Medicine

Department of Surgery

*ARTHUR WELLS ELTING, M. D., LL. D.
Professor of Surgery

ARTHUR JOSEPH BEDELL, M. D.
Clinical Professor of Ophthalmology and Otology

GEORGE EVERETT BEILBY, M. D.
Clinical Professor of Surgery

* Member of the Executive Faculty

JOHN McWILLIAMS BERRY, M. D.
Clinical Professor of Orthopedics and Roentgenology

JOSEPH LEWI DONHAUSER, M. D.
Clinical Professor of Surgery

JOHN BRUCE HARVIE, M. D.
Clinical Professor of Surgery

CHARLES G. McMULLEN, M. D.
Clinical Professor of Surgery

ARTHUR HENRY STEIN, M. D.
Clinical Professor of Surgery

CLEMENT FRANK THEISEN, M. D.
Clinical Professor of Laryngology and Rhinology

JAMES NEWELL VANDER VEER, M. D.
Clinical Professor of Genito-Urinary Surgery

STANLEY EARL ALDERSON, M. D.
Instructor in Surgery

PETER L. HARVIE, M. D.
Instructor in Surgery

EUGENE EUNSON HINMAN, M. D.
Instructor in Laryngology and Rhinology

WILLIAM PATRICK HOWARD, M. D.
Instructor in Surgery, Orthopedics and Roentgenology

CHARLES HENRY MOORE, M. D.
Instructor in Ophthalmology and Otology

ARTHUR SAUTTER, M. D.
Instructor in Venereal Diseases

JOHN FORREST SOUTHWELL, M. D.
Instructor in Surgery and Genito-Urinary Surgery

PERCIVAL W. HARRIG, M. D.
Assistant in Venereal Diseases

JOHN EDWARD HESLIN, M. D.
Assistant in Genito-Urinary Surgery

HENRY HUN, M. D.
Assistant in Surgery

WILLIAM GEORGE KEENS, M. D.
Assistant in Laryngology and Rhinology

JOHN PAUL O'KEEFFE, M. D.
Assistant in Laryngology and Rhinology

FRED F. McGAULEY, M. D.
Assistant in Surgery

Department of Gynecology

*JOHN ALBERTSON SAMPSON, A. M., M. D.
Professor of Gynecology

PAUL TOMPKINS HARPER, M. D.
Clinical Professor of Obstetrics

THOMAS OWEN GAMBLE, M. D.
Instructor in Obstetrics

ROLAND G. HOLT, M. D.
Instructor in Obstetrics

TIFFANY LAWYER, M. D.
Instructor in Gynecology

JOSEPH O'CONNOR KIERNAN, M. D.
Resident Obstetrician, Brady Maternity Home Assistant in
Obstetrics

Department of Neurology

*LASALLE ARCHAMBAULT, M. D.
Professor of Neurology

NELSON KAUFMAN FROMM, M. D.
Instructor in Neurology

WILLIAM KIRK, M. D.
Instructor in Anatomy of the Nervous System

Department of Anatomy

*WESLEY MANNING BALDWIN, A. M., M. D.
Professor of Anatomy

CHARLES E. ALLEN, A. B., M. D.
Instructor in Anatomy

* Member of the Executive Faculty

ANTON SCHWARTZ SCHNEIDER, B. S., M. A., M. D.
Instructor in Anatomy

THOMAS WILLIAMS JENKINS, M. D.
Assistant in Anatomy

Department of Physiology

*MELVIN DRESBACH, M. Sc., M. D.
Professor of Physiology

LAWRENCE JOSEPH EARLY, M. D.
Associate in Physiology

ARTHUR KNUDSON, PH. D.
Associate Professor of Biological Chemistry

HELEN R. HOSMER, B. S.
Assistant in Biological Chemistry

Department of Pathology

VICTOR C. JACOBSON, M. D.
Professor of Pathology

LAWRENCE JOSEPH EARLY, M. D.
Associate in Bacteriology

HAROLD E. MARDEN, M. D.
Instructor in Pathology and Bacteriology

PERCY LAWRENCE DeNOYELLES, M. D.
Assistant in Pathology and Bacteriology

WALTER KINGSLEY GRIGG, B. S.
Assistant in Bacteriology

CALENDAR

1921

| | |
|--------------------------------|-----------------------|
| Examinations begin | Monday, September 12 |
| Registration of students | Monday, September 19 |
| Election recess | Tuesday, November 8 |
| Thanksgiving recess | November 24, 25, 26 |
| Christmas recess | Saturday, December 24 |

* Member of the Executive Faculty

1922

Mid-year examinations begin.....Wednesday, January 25
 Second semester begins. (All classes except first year)

Monday, February 6

First semester of first year ends.....Thursday, February 9

Second semester of first year begins.....Monday, February 13

Washington's birthday, a holiday.....Wednesday, February 22

Memorial day recess.....Tuesday, May 30

Examinations beginWednesday, May 31

Commencement.Monday, June 12

Examinations for advanced standing....Monday, September 18

Conditions examinationsMonday, September 18

Academic year begins, registration of students

Monday, September 26

REQUIREMENTS FOR ADMISSION

Admission to First Year Class. No applicant for the Degree of Doctor of Medicine is admitted to the Albany Medical College, Medical Department of Union University, unless he has satisfactorily completed, in addition to a high school course, two years of work in Union College or presents equivalent credits, from another approved institution, as outlined below. Each candidate must present a Medical Student's Certificate from the Examinations Division of the Board of Regents of the State of New York. No entrance conditions are allowed.

The minimum collegiate premedical work is sixty semester hours extending through two years of thirty-two weeks each exclusive of holidays. The subjects included in the two years of college work should be in accordance with the following schedule adopted by the Association of American Medical Colleges:

Required Subjects — Chemistry, physics, biology, English composition, a modern foreign language.

Subjects Strongly Urged — Comparative vertebrate, psychology, social science.

For curriculum of Pre-Medical course given at Union College see page 113.

Combined Courses leading to A. B. and M. D. degrees. While the above courses represent the minimum requirements for admission to the first year it is very strongly recommended that if possible the college work include three instead of two years so

as to allow a more thorough preparation in physics, chemistry and biology and secure a greater breadth of culture.

Limitation of Numbers. The classes are limited in number and the college reserves the right in its discretion to refuse applicants, if the number admitted is as large as can be effectively taught. Women are admitted. Students are requested to apply for admission before July 1, on blanks to be furnished by the dean's office. All inquiries and other communications should be addressed to the Office of the Dean, Albany Medical College, Albany, N. Y.

Admission to Advanced Standing. All candidates for the degree of Doctor of Medicine desiring to be admitted to advanced standing must satisfy the conditions referred to under Admission to the First Year Class and in addition must present evidence that they have satisfactorily completed in an approved medical school the courses from which exemption is desired. They may also be required to pass examinations by the heads of the departments concerned. It is against the policy of the faculty to admit students to advanced standing in the fourth year.

Admission as Special Students. On petition, supported by recommendation from the head of the department, special students may, at the discretion of the faculty, be registered in any course. Students who intend to be candidates for the degree of M. D., but find it practicable to devote only a limited amount of time to study and class work, may with the dean's permission spread the courses of any one year over not more than two years, provided they adapt themselves to any changes that may be made in the curriculum, and pay their fees pro rata, plus any just contingent increment found necessary. Resumption after the interruption of the medical course is allowed at the point where the student dropped out only when the intermission is not over two years and providing he has the preliminary education of the class to which he is admitted. Courses added, modified or lengthened during his absence are, at the discretion of the faculty and the instructor in charge, repeated in whole or in part.

EXAMINATION AND ADVANCEMENT OF STUDENTS

The passing mark for any course is 75. A mark below 75, but above 59, constitutes a "condition." A mark below 60 con-

stitutes a "failure." A student who has failed in any subject must repeat the work in that subject. A student who is conditioned in not more than 50% of credits during the first and second years and not more than 25% of credits during the third and fourth years is entitled to but one re-examination on the subjects in which he is conditioned. All conditions must be passed before the student may enter the succeeding year. Students conditioned in more than 50% of credits during the first and second years and more than 25% of credits during the third and fourth years must repeat the work of the entire year. No student is registered more than twice in the same course. No student is admitted to the third-year class unless he has taken the preliminary State Board examinations. No student is admitted to the fourth-year class unless he has successfully passed the preliminary New York State Board examinations.

EXPENSES

The tuition fee is \$200.00 (two hundred dollars) a year, payable in advance, or if desired, in two installments, the first on or before September 19, 1921, the second on or before February 4, 1922. The fee for dissecting material is \$15. There are no extra charges except for laboratory breakage or loss and certain individual supplies for which a deposit of \$5 is required in each of the following courses: anatomy, physiology, biological chemistry, pathology, pharmacology, and clinical chemistry, and clinical pathology.

SCHOLARSHIPS

Dr. Julia G. McNutt Scholarship. This scholarship was established by the Albany Colony of the National Society of New England Women and provides \$200 for tuition at the Albany Medical College, to be awarded to a woman medical student, preferably of New England ancestry.

Dr. Robert M. Fuller Scholarships. The income of a fund of \$30,000, donated by Dr. Robert M. Fuller, provides for scholarships for students of the Albany Medical College who have attended Union College for two or more years, preference being given to students who show a marked degree of excellence in the department of chemistry. (Page 125.)

DEPARTMENTS OF INSTRUCTION

ANATOMY

Anatomy. The work in this department is practical and the instruction personal. The various tissues and organs of the human body are studied synchronously, so far as is possible, in the subdivisions of embryology, microscopical anatomy, and gross anatomy in order that the student may acquire a more comprehensive view and better correlated knowledge of the subject. The kinship of human structure to that of the higher vertebrates is pointed out by lecture and demonstration. The morphological features of the cadaver are interpreted upon biological and physiological grounds. Consideration of the various aspects of the mechanics of development leads to the fields of embryological defects, arrests, and monsters. Emphasis is laid upon the relation of the science to surgery and to medicine by the courses in regional and surgical anatomy. The subject matter of the whole science is approached with the purpose of inquiry and investigation.

The laboratories are equipped for research work along descriptive and experimental lines. Research workers who will give half or the whole of their day are welcomed and granted every facility.

Gross Anatomy. This subject is taught almost entirely by the dissection of the human cadaver. Demonstrations upon the cadaver, models, and prepared dissections are given when necessary for the purpose of elucidating the more difficult features of the subject as they occur. Dissections of the adult are compared with those of the infant. The work of the dissecting room is further augmented by the study of living models, the purpose being to familiarize the student with the features of the live body as they present themselves to the eye and to the touch, thereby effecting a most essential and practical correlation with the facts gained in the dissecting room. The body is divided into the following parts for dissection:

- | | |
|------------------------|--------------------------|
| I Head and neck | IV Upper extremity |
| II Thorax | V Lower extremity |
| III Abdomen and pelvis | VI Brain and spinal cord |

The required work upon each part comprises (a) a dissection of the part, (b) a practical oral examination upon the completion of the part, (c) a written examination upon the completion of the part.

Special courses consisting of the dissection and study of regions or of parts are open to graduates.

Microscopical Anatomy. Instruction in histology is given by means of lectures, demonstrations, class conferences, and by practical work in the laboratory. The science is approached by the study of the cell and of the elementary tissues. The finer anatomy of the organs of the cadaver is considered in connection with the study of freshly-autopsied material and the work in the dissecting room. The consideration of living and of fresh and unstained tissues precedes that of fixed and stained specimens. Practical instruction in the fixation, imbedding, cutting, and the vital-staining of tissues is given. Class conferences are held at stated intervals.

Embryology. Instruction in this subject is given by means of lectures, demonstrations upon models, class conferences, and by laboratory work. The lectures cover the various features of mitosis, fertilization, cleavage, gastrulation, and the formation of the germ layers. Later, by coordination with the work in gross anatomy, the various phenomena of histogenesis and of organogenesis are considered. Emphasis is laid upon those stages of development at which defects, arrests, and monsters are most likely to occur and interpretations sought in the fields of comparative and of experimental embryology. The laboratory work consists of the study of stained serial sections and of the study of the larger embryological features by means of the binocular microscope. Demonstrations and class conferences are held at stated intervals.

PHYSIOLOGY

Physiology for First Year Medical Students. The main subject in this course is the physiology of man. As an introduction, the fundamental properties of living substance are surveyed and the reactions of organisms to stimuli are studied, in order to review the relations of animal forms to their environ-

ment. From the elementary vital phenomena the study proceeds to the more complex functions of tissues and organs and to their correlation in the systems of the body. The method of presentation is that of a combination of lectures, demonstrations, discussions and laboratory practice. The student is given guidance sufficient to save time and do his work systematically, but he is left to his own resources as much as possible and initiative is encouraged.

In the laboratory various animals are used, under proper supervision, so that they are treated painlessly. In many exercises observations are made upon the human body; thus, the student learns to employ methods and apparatus which will be of service to him in clinical work. The emphasis is not laid upon utility, however, but upon the fundamental facts brought out in the experiments.

The sources of information, aside from the laboratory, are standard texts and the extensive collection of books and periodicals in the New York State Library. A certain amount of time is allotted to be spent in that library, where topics of interest are worked up and presented, in many instances, for discussion in the class room. The main purpose of this library work is to encourage reading along physiological lines and the development of a critical faculty.

The student's knowledge of the subject is tested by intimate personal contact with his instructors, by stated examinations during his course and by a comprehensive final examination. Approximately three hundred and thirty hours are devoted to the subject, as follows: lectures, fifty hours; recitations, forty-five hours; demonstrations, fifteen hours; laboratory work, two hundred and ten hours.

The physical side of physiology is correlated with the chemical and with pharmacology, as outlined below.

Biological Chemistry. A systematic course of lectures, recitations, conferences and laboratory work is given covering those portions of the subject which are of the greatest importance to the student of medicine. Subjects studied in detail are: Composition and properties of carbohydrates, fats, and proteins; chemistry and physics of the cell; composition of milk and more important foodstuffs; chemistry of digestion, absorption and

metabolism; study of tissues — blood, muscle, nervous and connective; normal and pathological urine. In the laboratory course each student is supplied with all chemicals and apparatus required. As a prerequisite courses in chemistry required for entrance; namely, inorganic, quantitative analysis and organic chemistry are essential.

Clinical Chemistry. The work in this course consists of a study of important practical aspects of clinical chemistry and nutrition, supplemented by lectures and outside reading. The course is devoted to qualitative and quantitative clinical examination of urine, gastric contents, blood, milk and feces. A part of the course consists also in carrying out a series of metabolism experiments in order to impress the important points of normal and abnormal metabolism. The student is thus made familiar with procedures which have an important practical application. Lecture, 1 hour, and laboratory, 4 hours per week, during the second half of the second year.

Pharmacology. In this course, instruction is given by lectures, recitations, demonstrations and laboratory work. The work covers pharmacy and materia medica in which the student has an opportunity of learning the physical and chemical properties of the most important drugs; a few exercises in pharmaceutical compounding and in prescription writing and incompatibilities are included. The major part of the course covers experimental work illustrating the physiological action of a number of drugs.

Chemical Pharmacology. Lectures and recitations, two hours a week; laboratory, six hours a week during January.

Pharmacodynamics. Lectures and recitations, three hours a week, laboratory, five hours a week during the second semester. Total 160 hours.

These courses are given in the second year.

Research and Advanced Work. Students properly qualified may select special work and undertake investigation in physiology, biochemistry and pharmacology.

PATHOLOGY

Under this department are grouped the courses of pathology, bacteriology and parasitology. In introducing the

student to the study of pathology, less stress is laid upon laboratory and autopsy technique than upon the actual apprehension of lesions as presented by the instructor at the autopsy table and through the microscope. Daily lectures are given upon the subjects which are to be studied in subsequent laboratory periods and the small size of the classes enables much individual instruction to be given. The close relationship enjoyed by clinician and pathologist and which is enhanced through the location of the entire pathology department in the main teaching hospital, accrues to the benefit of the student in many obvious ways. The department has a growing museum illustrating the various lesions of pathological anatomy, and this is used freely in teaching.

The student is required to attend the autopsies, to write a protocol and to give careful microscopic study to all the important organs in each case seen. In addition to the prescribed work of the second year it is planned to offer this year to fourth year students a special short course in tumors and to a qualified few the opportunity of original investigation in experimental pathology.

The course in medical bacteriology and parasitology covers the usual fields in these sciences with particular stress laid upon the clinical importance of pathogenic organisms. Material from the hospital wards is constantly available for study and the department is fortunate in having the hearty cooperation of the Laboratory of the State Department of Health which is located very close to the Albany Hospital. After the student is well founded in the fundamentals of bacteriology, the phenomena of immunity are studied, with preparation in the laboratory of antigens and amboceptors, demonstration of the Wasserman, performance of the Widal and other immune reactions.

MEDICINE

Internal Medicine. Instruction in internal medicine is given in the third and fourth years. In the third year the student is engaged in practical individual work in the general dispensaries, St. Peter's Hospital and the Tuberculosis Department, acting as assistant in caring for out patients.

Systematic didactic and clinical lectures in medicine are given during the third and fourth years as a basis for correlating and amplifying the information gained in the clinics and at the bedside. In the fourth year the students serve as assistants in the medical wards. Here they have bedside instruction in small groups, and responsibility under supervision.

Physical Diagnosis. The course in physical diagnosis, including history taking, is given to small groups in the latter half of the second year followed by an intensive review early in the third year and continued during the entire year in the form of dispensary work, four three-hour periods a week supplemented by one period a week used as a lecture hour, quizz hour or demonstration clinic.

In the second year, the work is on selected material found in the Frances Elliott Austin Infant's Home, the Albany Orphan Asylum and the Albany Hospital Tuberculosis ward, and dispensaries, while the third year instruction is carried out in the dispensaries of the Albany Hospital and St. Peter's Hospital, the Alms House Hospital and St. Margaret's House. In this way it is believed that the student first acquires a knowledge of the normal, and later has abundant opportunity to study abnormal physical signs as such, as well as their combinations occurring in various diseases, thus preparing him for intensive study of medicine in clinical bedside sections in the fourth year.

Therapeutics. A course of one hour a week in therapeutics is offered to third year men. A special effort is made to show the clinical use of those drugs whose pharmacologic action has been studied by the student in the second year, and thus to bridge over the gap between pharmacology and therapeutics, encouraging the student to demand pharmacologic proof for the action and efficacy of a drug. Lectures and demonstrations, including instruction in prescription writing, are given dealing with such therapeutic procedures as paracentesis of the chest and abdomen, lumbar puncture, intra-spinal injections, intravenous injections and transfusion. Demonstrations of some of the simpler procedures connected with nursing, such as the preparation of the hot pack, the alcohol sponge bath, etc., are given

under the direction of the superintendent of nurses of the Albany Hospital.

Lectures and, in so far as possible, demonstrations are given on the following topics by those specially qualified to do so: Electrotherapy, X-ray, radiotherapy, massage, and hydrotherapy.

Pediatrics. The course of study in children's diseases consists of didactic lectures on the practical recognition and treatment of diseases of children. The course includes clinical bedside instruction in small groups; history taking, study of case histories; demonstration of infant feeding and preparation of food; examination of milk, stools, etc.; practical demonstrations of lavage, gavage, colon irrigation, lumbar and longitudinal sinus puncture; weighing, bathing, and clothing babies; as also social pediatrics with practical work at the Child Welfare Station and Day Nurseries, and visits to milk depots and dairies. During the senior year elective work in the care and feeding of infants can be taken at St. Margaret's House and Hospital where laboratory facilities give opportunity for special research work.

The cities of Albany, Troy, and Schenectady offer numerous opportunities for students for the study of diseases of children and infants, and also facilities to observe the medical inspection of school children and the operation of infant welfare stations.

The Child's Hospital, St. Margaret's House and Hospital for Infants, the Children's Ward of the Albany Hospital and Ellis Hospital, the Frances Elliott Austin Infants' Home and the dispensaries of the Albany Hospital, and the South End Dispensary, afford abundant clinical material for the student.

The Albany Orphan Asylum, St. Vincent's Orphan Asylum and the Troy Orphan Asylum permit students from the Albany Medical College free access to study the diseases of children.

Educational Hygiene. This very recently developed branch of medicine includes a consideration of the organization, scope and methods of school medical inspection, health education, physical training, the sociology and psychology of mental deficiency and delinquency as confronted in the public schools, nutritional problems among school children, school nursing, control of contagious diseases in the schools, the operation of school dental

dispensaries and the development of systems of records in the administration of the above lines of health activity.

Dermatology and Contagious Diseases. In the third year clinics and clinical lectures are given and in the fourth year section work is given to groups of students. In the fourth year one hour a week is devoted to a quiz.

Didactic lectures in contagious diseases are given for the most part in the course in pediatrics. For the practical individual instruction in contagious diseases students are taught in small sections during the third and fourth years, in which they receive bedside instruction in the contagious department of the Albany Hospital and the contagious department of the Samaritan Hospital.

Mental Diseases. Instruction is given to the senior class divided into sections. Students report upon the wards at half-past two o'clock on alternate Mondays during the year, and in groups of two or three are assigned individual cases for examination. At half-past three the section meets the instructor and the reports are discussed and criticized. A syllabus in the form of a notebook with short psychological introduction is used as a guide. Opportunity is given to observe the progress of different cases from week to week.

This plan of instruction was adopted upon the opening of Pavilion F in 1902 and is thought to be the first instance in this country of systematized bedside teaching of mental diseases for undergraduate students.

Clinical Pathology. In this course a systematic study of the methods for examination of urine, blood, sputum, stomach contents, stool and body fluids is undertaken. Instruction is given by means of work in the laboratory, supplemented by brief lectures and outside reading. Emphasis is laid upon the training of students in the practical and personal application of laboratory diagnostic methods.

Each student is provided with a microscope, locker, blood counting apparatus, reagents, etc.

Public Health. Two courses in Public Health are given during the second semester, as follows:

I. Laboratory Course in Public Health

This course is designed primarily for undergraduates, but physicians and health officers may enroll. It consists in lectures, demonstrations, and practical laboratory and field work, including a sanitary survey.

II. Post-Graduate Course in Infectious Diseases and Public Health

This course is designed for health officers and physicians.

SURGERY

Surgery. The teaching of surgery begins in the second half of the second year, with a course in regional, applied and surgical anatomy. In addition there is a course in surgical technique.

In the third year are given a course in surgical diagnosis and a laboratory course in surgical pathology. Section work is given in the surgical dispensary at the South End Dispensary and at the Albany Hospital Dispensary. Weekly recitations in surgery are held throughout the year. Surgical clinics are held weekly throughout the year. Surgical clinics are held also at the General Electric Company Emergency Hospital and at the Ellis Hospital in Schenectady once each week.

In the fourth year bedside teaching is done in which the senior students in small groups serve as assistants in the wards of the Albany Hospital. Surgical teaching is done in a similar manner in the Samaritan Hospital in Troy.

Surgical Anatomy. The course in surgical anatomy, given in the second half of the second year, consists of a series of demonstrations, lectures and quizzes to round out the course in anatomy just completed and to illustrate the practical application of anatomy to everyday problems in surgery and medicine. The college is fortunate in having a large collection of museum specimens, and these, together with dissections and correlary demonstrations on a living subject, aim to give a comprehensive idea of patho-

logical processes of the human organism, the topographical anatomy for diagnosis and surgical routes for treatment.

Surgical Technic and Minor Surgery. The course in surgical technic and minor surgery consists as far as possible of practical demonstrations, preceded by a brief synopsis of the development of modern surgical technic.

The following subjects are included in the course: Preparation of patient and operator for surgical operations; methods of preparation and sterilization of gauze in the various forms in which it is used; preparation of suture and ligature material and the indications for their use; demonstration of instruments, their uses, care and sterilization; drainage in its various forms and its indications; preparation of poultices and fomentations; methods and appliances used in the post-operative care of patients, such as dressing of wounds, feeding appliances, stomach and rectal tubes, catheters, transfusion, application of heat and cold, and use of the Esmarck bandage and the tourniquet.

Practical work is required of each student in the application of various types of bandages and splints.

Surgical Pathology. Surgical Pathology is taught three consecutive hours a week throughout the third year. One hour is devoted to lectures and two hours to microscopic and macroscopic demonstrations of surgical specimens and of other pathological material available at the time. The essentials of histology and pathology and their relation to surgery are discussed before starting on general and special surgical pathology. Stress is laid on the clinical symptoms as derived from pathologic lesions.

Surgical Diagnosis. The course in Surgical Diagnosis, as given to the third year class, comprises two hours a week throughout the year of practical and didactic lectures. When possible an extra hour is added each week.

The lectures are based upon a Surgical Diagnosis Syllabus, which gives to the student the essentials of general and of special diagnosis.

The methods of examination of the patient are presented.

Special stress is given to regional anatomy, regional symptoms, and regional differentiation of symptoms. Case history teaching occupies a prominent part of the course, and the syllabus presents to the student various types of questions applicable to special groups of cases.

Orthopedics and Roentgenology. The course in orthopedics is given at the Medical College building and in the wards of the Albany Hospital and The Child's Hospital. The Albany Hospital and The Child's Hospital are equipped to care for orthopedic cases of all kinds and in connection with The Child's Hospital there is a corrective room in charge of a competent instructor. The clinical material includes all classes of orthopedic cases. In the third year orthopedics is taught by means of clinical lectures and lantern slide demonstrations. In the fourth year the students are divided into sections and in the wards of the Albany Hospital and The Child's Hospital are given an opportunity to see and examine all cases and note the treatment given.

For the course in roentgenology the Albany Medical College has at its disposal the Roentgen Ray Department of the Albany Hospital and of The Child's Hospital. The equipment of these departments is excellent; it includes the apparatus for the use of gas and Coolidge X-Ray tubes, stereoscope, stereoscopic tube stand, stereoscopic abdominal and thoracic apparatus both horizontal and vertical, horizontal and vertical roentgenscopic apparatus, a general localizer and a localizer for foreign bodies in the eye. The clinical material of the departments is extensive and varied. The work at present averages about 8000 roentgenographic and roentgenscopic examinations a year. The value of the Roentgen Ray as an aid to diagnosis in the various branches of medicine and surgery is considered in a series of lectures and demonstrations and a special study of X-Ray plates as related to Orthopedic Surgery is made throughout the year.

Genito-Urinary Surgery. In the third year didactic lectures (one hour per week) throughout the college year aim to inculcate in the minds of the students the salient features of the usual diseases met with, so that the student is fitted to pursue

the work of the next year in an intelligent manner. These lectures are illustrated and there is an occasional lantern slide demonstration in the nature of a review. In the fourth year teaching is entirely by sections of four to eight men; the students have practical individual experience in the treatment of cases.

The Albany Hospital, through its Genito-Urinary Department and the South End Dispensary branch, offers ample clinical material for teaching.

A special class is formed for those who wish to pursue advanced study, and consists of ten lessons of one hour each.

Ophthalmology and Otology. A one hour lecture is delivered every week for the first half of the third year in ophthalmology and the latter half in otology. The didactic work is illustrated by lantern slides and cadaver operations.

The third year class is divided into sections for the study of the usual diseases of the eye and ear. Cases illustrating the routine method of examination for both eye and ear diseases are presented. Special emphasis is laid upon the external diseases of the eye, the method of using the ophthalmoscope and its practical application, operations, and the relationship between ophthalmology and general medicine. The student examines the patients and must pass a theoretical and practical examination.

They are taught the method of examination and treatment of the usual ear diseases. This instruction is supplemented by operations and internal ear lesion demonstrations.

The course is so arranged that each student has an opportunity to become thoroughly familiar with routine examination and the ordinary diseases of the parts studied.

The Albany Hospital, Albany Hospital Dispensary, South End Dispensary, County Hospital, Albany Orphan Asylum and Old Ladies' Home afford abundant opportunity for extended observations.

Laryngology and Rhinology. The third year class is divided into sections for practical work in diseases of the nose and throat. One didactic lecture is given every week. Students are taught methods of examination and diagnosis. Clinical

material at St. Peter's Hospital, the Albany Hospital, Child's Hospital, South End Dispensary, and Elliott Austin Home will be available for this purpose.

NEUROLOGY

This department provides instruction in neurology, neuropathology and the anatomy of the nervous system.

Work in this department really commences in the first year, during which the student is taught the embryology of the nervous system and acquires a preliminary acquaintance with the gross morphology of the brain and spinal cord as well as with the histology of the nerve elements and the simpler divisions of the central and peripheral nervous organs. During the second year an illustrated didactic lecture is given each week on the anatomy and physiology of the nervous system, and in addition a weekly laboratory exercise of three hours is devoted to the gross and microscopic study of the normal and pathological anatomy of the nervous system. In this laboratory course the student receives sections of the different levels of the cerebro-spinal axis from the cauda equina to the basal ganglia, as well as typical sections illustrating practically all the known diseases of the brain and spinal cord. At stated intervals recitations are held on the more important topics covered in the lectures and demonstrations. During the third and fourth years the students attend one didactic and one clinical lecture and one recitation on diseases of the nervous system each week. Instruction in neurology is given to both classes at the same time, the subject matter being so divided that diseases of the brain are covered one year and diseases of the spinal cord and peripheral nerves the following year. Particular attention is given to the neurological clinics at which each patient is presented by two students of the senior class to whom the case has previously been assigned for examination and diagnosis. The method of history taking and examination, the reported findings and the postulated diagnosis are criticised, and considerations bearing upon pathogeny, differential diagnosis and therapeutic indications are discussed at length. When suitable cases are available, lumbar puncture, differential electrical tests,

experimental induction of vertigo and nystagmus, etc., are performed before the class. Cases for neurological clinics are always easily obtained either from the general medical service and out-patient department of the Albany Hospital and the Child's Hospital, or from the Alms House and County Hospital. Occasionally, a clinic hour is utilized for a lantern slide demonstration of neurological conditions not encountered in the usual clinical display, there being for this purpose an exceptionally varied and interesting collection of pictures derived from the leading neurological clinics of Europe. In addition, the students of the fourth year class, divided into small groups, have the opportunity on certain days of seeing and examining patients in the various dispensaries and of learning the technique of electro-diagnosis and electro-therapy.

GYNECOLOGY

Gynecology. Gynecology is treated by a course of classroom studies in which the various normal and abnormal conditions of the pelvic organs are presented to the students in the form of illustrated problems which they are asked to solve. The solution of these problems is supplemented by additional information necessary to complete the subject under discussion. This exercise is held once a week throughout the third and fourth years. Practical instruction is given to the fourth year class (in small groups) at the South End Dispensary and Albany Hospital.

Obstetrics. Material for instruction is furnished by the Anthony N. Brady Maternity Home, the Albany Hospital and the Albany Guild for Public Health Nursing.

The Anthony N. Brady Maternity Home maintains a public ward service of twelve beds, a dispensary, and a motor ambulance. Practical instruction is given by the clinical professor of obstetrics who is attending obstetrician to the home and by the assistant in obstetrics who is its resident obstetrician.

The material offered by the Albany Hospital in its maternity ward of seven beds is utilized as available. The Special Obstetric Department of the Albany Guild for Public Health

Nursing, under the direction of the obstetric department of the college, offers opportunity for the care of cases in their homes.

The aim of the department is to assure the student a firm foundation in obstetric principles and offer intensive instruction upon a relatively limited number of patients.

History of Medicine. The subjects of medical ethics, medical jurisprudence and economics are covered in the regular courses of study by several departments and by special lectures. The responsibilities of the physician towards the insane and their relatives and the general public, and the criminal aspects of the mentally defective, are discussed in the course in mental diseases and in the public health course. In the course on obstetrics are taken up the moral and legal side of rape, feigned and unconscious pregnancy, what constitutes a "live birth," feigned or unconscious delivery, injury to the foetus during precipitate labor, post mortem delivery, and the diagnosis of recent delivery. Certain medico-legal aspects of toxicology are covered in the course in pharmacology. In the course in gross pathology, medico-legal autopsies and cases of homicide, suicide, accident and abortion and other phases of legal medicine are demonstrated or discussed.

INVESTIGATION AND SPECIAL INSTRUCTION

Opportunity for elective work and research is offered to those who are deemed qualified by those in charge of the various courses after conference with the heads of their respective departments. In special instances arrangements may be made as heretofore for co-operation or help in X-Ray or similar research from the Research Laboratory of the General Electric Company. For graduate and summer courses and other special instruction, application should be made to the dean.

Post-Graduate Clinical Instruction. Opportunity is provided for small groups of physicians to receive personal clinical instruction. The time devoted to this work is arranged in a manner similar to that for the post-graduate course in infectious diseases and public health previously described. Already a post-graduate course in medicine has been started, the general plan of which is

as follows: This course is limited to four physicians who report at the Record Room of the Albany Hospital at 9:30 each Tuesday morning. They are assigned cases which have been admitted to the medical service during the previous week. These cases are studied carefully by the physicians. At 11:30 bedside visits and conferences are held. The physician to whom the case is assigned is regarded as the family physician, while the other members of the group discuss the case from the standpoint of consultants. The opinion of the surgical and special services including neurological, psychiatric, gynecological, eye and ear, nose and throat, skin and venereal, orthopedic, X-ray, etc., are freely made use of, for the full time teaching medical service acts as a clearing house for all cases not frankly mental, contagious or surgical.

For further details, address:

OFFICE OF THE DEAN,
Albany Medical College,
Albany, N. Y.

ALBANY LAW SCHOOL

This school is among the oldest institutions of the kind in the country, having been established in 1851, and its graduates number many of the most successful men in the profession. It is and has been largely represented in the executive, judicial and legislative departments of this and many other states, as well as of the federal government. It became a part of Union University in 1873, and begins its sixty-ninth year as a law school with the present scholastic year. During its long and successful career it has, in common with other law schools, done much to demonstrate what was at one time doubtful, but is now accepted almost as an axiom, that a course at the law school is a well-nigh necessary prerequisite to a successful professional career. Its instructors have always been men of repute and standing, both for professional learning and personal character.

The local advantages of the city of Albany, as the seat of a professional school, can not be overrated. It is the capital of one of the leading states in the Union, whose legislature is in session here for the third part of the year, presenting opportunities not afforded by any other law school in the state for observing the methods and procedure collectively of the executive, judicial and legislative departments of the state government. The knowledge thus obtained by the students at law, who are to complete their course and to enter the realm of public affairs, can not be overestimated. It is easily accessible, remarkably healthful, and the scene of great business and professional activity.

The facilities afforded the students for reading and study are unsurpassed. Besides the convenient and well chosen library of the school accessible to the students at all hours of the day and evening, the students have the privilege of using the state law library, which is now established in the new Education Building. With free access to these libraries the student may be relieved to a great extent from purchasing text-books.

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Hubbard Chair of Legal Ethics

A few years ago only twenty of the law schools in this country made the subject of legal ethics part of the curriculum. This fact led Gen. Thos. H. Hubbard, class of '60 Albany Law School, to place at the disposal of the board of trustees the sum of \$10,000, the income to be applied to lectures upon this subject. The board of trustees decided to inaugurate the course at the opening of the school year of 1903. Forty lectures by as many distinguished judges and lawyers have been delivered up to this time. Among the number of lecturers are Judge William Howard Taft; Hon. Willard Bartlett, former Chief Judge of the Court of Appeals, and Judge Irving G. Vann of that court.

CALENDAR

1921

Registration, first semester.....Tuesday, September 20
 Scholastic year begins.....Wednesday, September 21
 Election day recess begins.....Friday, November 4
 Lectures resumed.....Wednesday, November 9
 Thanksgiving recess begins, noon.....Wednesday, November 23
 Lectures resumedMonday, November 28
 Holiday recess begins, noon.....Friday, December 23

1922

Lectures resumed.....Tuesday, January 3
Examinations

Monday, Tuesday, Wednesday, January 30, 31, February 1
McKinley day.....Sunday, January 29
Registration, second semester.....Monday, February 6
Lincoln's birthday.....Sunday, February 12
Washington's birthday — recess.....Wednesday, February 22
Easter recess begins, noon.....Friday, April 7
Lectures resumed.....Monday, April 17
Memorial day — recess.....Tuesday, May 30
Examinations.....Thursday, Friday, Saturday, June 1, 2, 3
CommencementWednesday, June 7

REQUIREMENTS FOR ADMISSION AND GRADUATION

The course for graduation is now three years. Candidates for graduation from this school will be required (1) to present evidence of a general preliminary education representing at least four years, or their equivalent, of work of a grade above the elementary or grammar school before beginning the course of study; (2) to have studied law at least three full years for the degree of LL.B., each school year of which shall consist of not less than thirty-two school weeks, exclusive of vacations, in which not less than ten hours of attendance upon law lectures or recitations of such prescribed course to be given or conducted by regular members of the faculty are required in each week, unless admitted to advanced standing of one year on graduation from a registered college or university; (3) to complete the course in residence of not less than one year; (4) to be of good moral character; (5) to be at least twenty-one years of age.

EXPENSES

| | |
|-------------------------------------|------|
| Matriculation fee, on entrance..... | \$10 |
| Tuition, each year..... | 150 |
| Graduation fee | 10 |

For catalogues or further information address

ANDREW V. CLEMENTS, *Registrar*

Albany Law School

Albany, New York

ALBANY COLLEGE OF PHARMACY

The Albany College of Pharmacy was created by act of the board of governors of Union University, June 21, 1881, and constitutes the department of pharmacy of Union University. It was incorporated as the Albany College of Pharmacy, August 27, 1881. The college is centrally located at 43-45 Eagle street.

A complete reorganization of the school has recently been effected. The faculty has been increased and strengthened, new courses have been added, and the laboratory equipment has been enlarged to meet the practical and scientific needs of the times.

Two degrees are offered: the degree of Graduate in Pharmacy, given on the successful completion of two years of college work, and the degree of Pharmaceutical Chemist (Ph. C.), covering three years of college work.

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CALENDAR

1921

Conditions examinations,

Monday, Tuesday, Wednesday, September 19, 20, 21

Term begins.....Monday, September 26

Election day—recess.....Tuesday, November 8

First quarterly examinations..Monday-Saturday, November 14-19

Thanksgiving recess..... Thursday-Saturday, November 24-27

Christmas recess begins.....Monday, December 19

1922

Sessions resumed.....Wednesday, January 4

Second quarterly examinations..Monday-Saturday, January 9-14

Lincoln's birthday—no recess.....Sunday, February 12

Washington's birthday.....Wednesday, February 22

Third quarterly examinations....Monday-Saturday, March 6-11

Fourth quarterly examinations for first and

second year students.....Monday-Saturday, April 17-22

Junior exercises.....May 3, Wednesday, 3 P. M.

CommencementThursday, May 4

Summer condition laboratory work begins.....Monday, May 8

Examinations for third year (Ph. C.) degree begin

Monday, May 15

University commencement.....Monday, June 12

ENTRANCE REQUIREMENTS FOR PH. G. COURSE

Every applicant for admission to the Junior Year of the Ph. G. course must be at least 17 years of age and must present a Pharmacy Student's Certificate issued by the New York State Education Department, and the number of his Registered Apprentice Certificate issued by the New York State Board of Pharmacy. Students who enter college without experience will receive their Registered Apprentice Certificate upon matriculating. Those who have successfully pursued two years' study at a high school or other school of corresponding grade, recognized by the State Education Department, may secure the Pharmacy Student Qualifying Certificate by sending their credentials to the Examinations Division, Education Department, Albany, N. Y., together with a fee of twenty-five cents.

ENTRANCE REQUIREMENTS FOR THE ADVANCED COURSES

Candidates for admission to these courses must have had four years of high school work. No student is eligible for the advanced courses unless he has satisfactorily completed all preliminary courses.

CURRICULUM

The curriculum includes:

First Year Subjects — General Chemistry, Qualitative Analysis, Theoretical and Practical Pharmacy, Manufacturing and Dispensing Pharmacy, Botany, Vegetable Histology, Physics, Pharmaceutical Mathematics, Pharmaceutical Latin, Physiology.

Second Year Subjects — Organic Chemistry, Quantitative Analysis, Theoretical and Practical Pharmacy, Manufacturing and Dispensing Pharmacy, Materia Medica and Pharmacognosy, Microscopic Pharmacognosy, Toxicology, Pharmaceutical Jurisprudence, Commercial Pharmacy.

Third Year Subjects — Advanced Analytical Chemistry, Bacteriology.

SUMMER CONDITION COURSES

Summer condition work is provided for those students who mediate upon the completion of the work in any laboratory course.

FEES

| | |
|------------------------------------|----------|
| Matriculation | \$5 00 |
| Annual tuition, Ph. G. Course..... | 185 00 |
| Examination fee | 15 00 |
| | \$205 00 |

Fees are payable in advance at the beginning of each school year, but may be paid, if desired, in two instalments of \$100.00

each. The first instalment of \$100.00 is due on entrance, the second on or before the fifteenth of December.

The fee for the third year (Ph. C.) is \$250.00.

A fee of \$30.00 is charged for each of the laboratory courses given during the summer months.

A breakage deposit of \$15.00 is required of each student taking the two years' course. Students taking the third (Ph. C.) year must pay a breakage deposit of \$25.00 at the beginning of each session. Any balance left from the breakage deposit after deducting cost of material broken, will be returned at the close of each session.

EMPLOYMENT AND EXPERIENCE

Before Graduation. Students are not required to have drug store experience at entrance, and many students enter college who have never worked in a drug store, but such experience is desirable. There is a great demand in the numerous drug stores of the city for pharmacy students' services. The compensation usually received is large enough to meet current expenses and the practical experience obtained is very helpful to the student. Personal application for employment always brings the best results. Students desirous of obtaining employment while attending college will be assisted in securing situations, but employment cannot be promised in advance, and places cannot be secured by correspondence.

After Graduation. The demand for licensed and junior pharmacists far exceeds the supply. The situation is so acute, in fact, that many drug stores have been forced to close because of lack of help. The outlook, therefore, for securing employment after graduation was never brighter than at the present time, and larger salaries are being paid now than formerly.

For a separate catalog giving more complete information address

WILLIAM MANSFIELD, *Dean*,
Albany College of Pharmacy,
Albany, N. Y.

THE DUDLEY OBSERVATORY

The Dudley Observatory is devoted to original research in astronomy, according to the purpose of its founder and successive patrons. Its contributions to science are represented in two volumes of *Annals* and in other published volumes and memoirs contained in the transactions of learned societies and astronomical journals. Its principal line of work at present is the determination of problems relating to the positions and motions of the stars and of the solar system as a whole.

The instrumental equipment of the observatory is designed for the purposes of exact measurement. In the tower of the main building is the Pruyn equatorial, with object-glass twelve inches in diameter. This instrument is equipped for both visual and photographic use, and is of a high order of mechanical perfection. The Olcott meridian circle is located in a separate building, especially designed for securing the utmost equality in the temperature between the external air and that in the building itself. Its object-glass is eight inches in diameter. It was made by Pistor and Martins, of Berlin, and is regarded by astronomers as a masterpiece of accurate workmanship. This instrument has been employed for many years in obtaining the measurements necessary for the construction of the numerous and elaborate star catalogues which have issued from the Dudley Observatory. In addition to these instruments, the observatory is in possession of various small telescopes, clocks, chronographs and smaller apparatus.

The institution is supported by an endowment, chiefly contributed by Mrs. Blandina Dudley, the late Catharine W. Bruce, and Hon. Frederic P. Olcott, as well as by appropriations which have been received from the National Academy of Sciences, and from current contributions of trustees and friends of the institution. Since 1902, annual grants have been made to the director of the observatory by the Carnegie Institution of Washington. These have been sufficient to provide for the entire force of assistants and computers now employed. In 1905, the Carnegie Institution made

special provision for carrying on the star researches upon which the observatory is engaged. This includes an appropriation which enabled the observatory to send the Olcott meridian circle to the southern hemisphere for two years with an ample force of observers, in order to carry out an essential feature of its investigations.

The Dudley Observatory is not designed to give general instruction in astronomy, though special students contemplating instruction in professional lines are received under an arrangement of computing service to the observatory.

The observatory is opened to visitors on Tuesday evening.

For further particulars apply to

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ENROLLMENT, UNION UNIVERSITY, 1921-1922

STUDENTS OF UNION COLLEGE

Abbreviations

N. S., North Section; M. S., Middle Section; S. S., South Section; N. C., North College; S. C., South College; O. G., "Old Gym" Dormitory.

md, completing course at Albany Medical College.

Seniors, Juniors, Sophomores: *ls*, Ph. B. course; *sc*, B. S. course; *ch*, B. S. course in chemistry; *ce*, B. S. course in civil engineering; *ee*, B. S. course in electrical engineering; *pm*, pre-medical course.

Freshman: *aa*, A. B. course A; *ab*, A. B. course B; *ac*, A. B. course C; *ad*, A. B. course D; *ae*, A. B. course E; *ce*, *ee*, *pm*, as above.

Candidate for the Degree of Master of Arts

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Graduate Students in Electrical Engineering

Ellsworth DeW. Cook, M. S. in E. E..*Union College*.....Scotia

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L. Malur Annappa, B. S. in E. E. ...*Union College*.....Hassan, India

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Candidate for the degree of Master of Science in Electrical Engineering
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Candidate for the degree of Master of Science in Electrical Engineering
- James Sherman Gault, B. S. in E. E..*Michigan Univ.*....Detroit, Mich.
Candidate for the degree of Master of Science in Electrical Engineering
- Francis A. Hamilton, B. S. in E. E..*Purdue Univ.*....Cincinnati, Ohio
Candidate for the degree of Master of Science in Electrical Engineering
- Joseph Francis Hayden.....*Cooper Union*....New York City
Not candidate for degree
- Arthur Rhodes Hines, E. E.....*Syracuse University*....Syracuse
Candidate for the degree of Master of Science in Electrical Engineering
- Ozro Harold Hunt, B. S. in E. E..*Univ. of Wash.*..Kennydale, Wash.
Candidate for the degree of Master of Science in Electrical Engineering
- Ray Albert Lerner, B. S. in E. E....*A. & M. Col. of Okla.*..Dill, Okla.
Candidate for the degree of Master of Science in Electrical Engineering
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Candidate for the degree of Master of Science in Electrical Engineering
- DeWitt C. Young, B. S. in E. E. *Purdue Univ.* . . . Indianapolis, Ind.
Candidate for the degree of Master of Science in Electrical Engineering
- Norman Geo. Zautner, B. S. in E. E. *Union College* Albany
Candidate for the degree of Master of Science in Electrical Engineering

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- Thomas S. Bailey, B. S. in C. E. *Union College* Schenectady
Candidate for the degree of Master of Science in Civil Engineering
- Howard H. Langdon, B. S. in M. E. *State Col. of Wash.* Sumner
Candidate for the degree of Master of Science in Civil Engineering
- Arthur Rablen, B. S. in C. E. *Union College* Albany
Candidate for the degree of Master of Science in Civil Engineering
- Henry Albert Schauffer, C. E. *Princeton Univ.* Schenectady
Candidate for the degree of Master of Science in Civil Engineering
- William L. Warner, B. S. in C. E. *Union College* Schenectady
Candidate for the degree of Master of Science in Civil Engineering

Graduate Students in Chemistry

- Guy Bartlett, B. S. in Ch. *Union College* Utica
Candidate for the degree of Master of Science in Chemistry
- Frank White Harrison, Ph. B. *Wooster College* Schenectady
Candidate for the degree of Master of Science in Chemistry
- Rudolph A. Schatzel, B. S. in Ch. *Union College* Schenectady
Graduate Students — 39.

Seniors, Class of 1922

- ee Milton Jacob Ackerman *St. Johnsville* K A Lodge
- cl Hartzell Palmer Angell *Schenectady* 930 Albany St.
- ls Ernest Bradford Augur *Hartwick* Φ Γ Δ House
- sc Eugene Bowman Barrett *Pine Plains* Φ Γ Δ House
- sc Robert Eglinton Barron *Schenectady* Ψ Υ House

| | | | |
|-----------|-----------------------------------|--|--------------------|
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| <i>cl</i> | Harold Isaac Blessing..... | <i>Schenectady</i> | 801 State St. |
| <i>ce</i> | James Willard Blewer..... | <i>Albany</i> | Δ Φ House |
| <i>sc</i> | James Lewis Bolton..... | <i>Beacon</i> | K A Lodge |
| <i>sc</i> | Leo Henry Bombard..... | <i>Fort Edward</i> | Pyramid Club |
| <i>ee</i> | Anthony Patrick Joseph Boudreau.. | <i>Schenectady</i> ... | 510 Rugby Rd. |
| <i>ee</i> | Lawrence Seward Bourst..... | <i>Ballston Spa</i> | Δ Θ House |
| <i>ee</i> | Harry Maxwell Bricks..... | <i>Skillman, N. J.</i> | M. S. S. C. |
| <i>ce</i> | Francis John Campbell..... | <i>Schenectady</i> .. | 139 Parkwood Blvd. |
| <i>sc</i> | Hugh Cady Campfield..... | <i>Washington, D. C.</i> ... | B Θ Π House |
| <i>sc</i> | Allan Landon Cass..... | <i>Albany</i> | Δ T House |
| <i>sc</i> | Ralph Kingsley Chase..... | <i>Schenectady</i> | Δ X A House |
| <i>sc</i> | Richard Rush Church, Jr..... | <i>Afton</i> | Δ T House |
| <i>sc</i> | Timothy Francis Cohan..... | <i>Amsterdam</i> | Δ Θ House |
| <i>sc</i> | John Cyril Collins..... | <i>Schenectady</i> | K A Lodge |
| <i>sc</i> | Orrin Penfield Dales..... | <i>Schenectady</i> | 13 Waverly Pl. |
| <i>ee</i> | Josiah Prema Das.. | <i>Dadballapur, Mysore State, Ind.</i> , | No. Colonnade |
| <i>ee</i> | George Alexander Davison.... | <i>Bryan, Texas</i> | N. S. N. C. |
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| <i>ee</i> | Raymond Thomas Fleming..... | <i>Johnstown</i> | Terrace Club |
| <i>m</i> | Philip Louis Forster..... | <i>Albany</i> | Albany Med. Col. |
| <i>sc</i> | Casmir Alexander Frantzke.... | <i>Schenectady</i> | Δ X A House |
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| <i>sc</i> | George Calvin Gates..... | <i>Watertown</i> | Terrace Club |
| <i>sc</i> | William Joseph Gottsegen..... | <i>Schenectady</i> | 510 Summit Av. |
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| <i>ee</i> | Walter Anthony Haberbush.... | <i>Gloversville</i> | Δ T House |
| <i>ls</i> | Nathan Hale..... | <i>Schenectady</i> | A Δ Φ House |
| <i>ee</i> | Reginald Bruce Hanford..... | <i>Washington, D. C.</i> | 26 Jay St. |

| | | | |
|-----------|-------------------------------|-------------------------------------|----------------------|
| <i>ce</i> | Hilton Hubbell Harris..... | <i>Schenectady</i> | Δ Θ House |
| <i>cl</i> | John Elder Harvey..... | <i>Schenectady</i> | 204 Park Av. |
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| <i>sc</i> | Edward Everett Houck..... | <i>Ballston Lake</i> | Ψ T House |
| <i>ce</i> | Ernest Smith Humphrys, Jr.... | <i>La Grange, Ill.</i> | X Ψ Lodge |
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| <i>ch</i> | Ronald Lewis Johnston..... | <i>Schenectady</i> | 1578 State St. |
| <i>ee</i> | Linn Milton Jones..... | <i>Bloomville</i> | Δ Θ House |
| <i>sc</i> | Henry Russell Kelly..... | <i>So. Schenectady</i> .. | So. Schenectady |
| <i>ce</i> | James Robert Kelsey..... | <i>Portland, Me.</i> | B Θ Π House |
| <i>ch</i> | Frederic Morris Klein..... | <i>Schenectady</i> | 316 Germania Av. |
| <i>sc</i> | Frank Pauley Knack..... | <i>Gloversville</i> | Δ Φ House |
| <i>ce</i> | Nathan Krause..... | <i>Schenectady</i> | 921 Emmett St. |
| <i>sc</i> | James Hutchins La Pan..... | <i>Saranac Lake</i> | Δ T House |
| <i>sc</i> | David Leonard Lieberman..... | <i>Brooklyn</i> | K N House |
| <i>sc</i> | Isadore Linsey..... | <i>Schenectady</i> | 429 Summit Av. |
| <i>sc</i> | Charles Theodore Locke..... | <i>Ticonderoga</i> | Φ Γ Δ House |
| <i>sc</i> | William Gerald Lucas..... | <i>Gloversville</i> | B Θ Π House |
| <i>ce</i> | Harold Hall McQueen..... | <i>Amsterdam</i> | Δ Θ House |
| <i>ce</i> | David Miller, Jr..... | <i>Schenectady</i> | 115 Victory Av. |
| <i>ee</i> | Frank James Moles..... | <i>Schenectady</i> .. | 115 Helderberg Av. |
| <i>ch</i> | Stanley Owen Morgan..... | <i>Schenectady</i> | 32 N. Dean St. |
| <i>ee</i> | Merton David Morse..... | <i>Denver</i> | Φ N Θ House |
| <i>sc</i> | Leland William Mosher..... | <i>Northville</i> | B Θ Π House |
| <i>m</i> | Walter Charles Mott..... | <i>Schenectady</i> | Albany Med. Col. |
| <i>sc</i> | William George Mulvey..... | <i>No. Troy</i> | 608 3d Av., No. Troy |
| <i>ls</i> | John Harris Murray, Jr..... | <i>Waverly</i> | Ψ T House |
| <i>sc</i> | Leon Samuel Nie..... | <i>Schenectady</i> | 135 University Pl. |
| <i>sc</i> | Carl James Niess..... | <i>Boonville</i> | Δ X A House |
| <i>ee</i> | Anthony James Palermo..... | <i>Schenectady</i> ... | 7 No. Wendell Av. |
| <i>ee</i> | Louis Parillo..... | <i>Schenectady</i> .. | 440 Van Vran. Av. |
| <i>sc</i> | Willard Francis Prior..... | <i>Hillsdale</i> | Terrace Club |
| <i>ce</i> | Herbert William Reutersham... | <i>Sag Harbor</i> | Δ X A House |
| <i>ce</i> | Thomas Wilgus Reynolds..... | <i>Amsterdam</i> | Φ Γ Δ House |
| <i>ee</i> | Francisco de Castro Ribeiro | <i>Oliveira-Minas, Brazil</i> , 740 | Eastern Av. |

| | | | |
|----|---------------------------------|----------------------|---------------------|
| sc | William Lee Richards..... | Glens Falls..... | Ψ T House |
| sc | Louis James Rinaldi..... | Schenectady..... | 219 Front St. |
| sc | Charles Warren Ring..... | Pleasant Brook..... | Φ Δ Θ House |
| ce | Fred Adam Roser..... | Herkimer..... | K Φ Lodge |
| ce | James Darius Royce..... | Palmer, Mass..... | Pyramid Club |
| ee | Domingo Santa-Maria..... | Santiago, Chile..... | 514 Union St. |
| sc | Victor Herman Scales..... | Glens Falls..... | Δ Φ House |
| ce | Henry Samuel Scherer..... | Mt. Vernon..... | Z B T House |
| ce | Roland Earl Schermerhorn..... | Schenectady..... | Φ Γ Δ House |
| sc | Irving Schwartz..... | Poughkeepsie..... | Z B T House |
| ee | George Joseph Smith..... | Watertown..... | Terrace Club |
| sc | Eugene Francis Sullivan..... | Fulton..... | Φ Δ Θ House |
| m | Willard Hamilton Sweet, Jr.... | Peekskill..... | Albany Med. Col. |
| ch | Arthur Winston Taber..... | Schenectady..... | 302 Van V'anken Av. |
| ch | Harold Isaac Thorp..... | Shelburne, Vt..... | Σ Φ Place |
| m | Arthur James Townley..... | Schenectady..... | Albany Med. Col. |
| sc | Benno James Troidle..... | Albany..... | Δ Θ House |
| ee | Joseph Fernando Tude..... | Bahia, Brazil..... | 740 Eastern Av. |
| ce | Richard Eugene Van Ness..... | Cobleskill..... | Ψ T House |
| sc | Archibald McIntyre Veghte.... | Johnstown..... | Δ Φ House |
| sc | Alfred Mace Wade..... | Albany..... | Δ T House |
| ee | Spencer Kellogg Warnick, Jr.... | Amsterdam..... | Δ Δ Φ House |
| sc | George Dean Waterman..... | Little Falls..... | Δ T House |
| ce | Henry Phillips Wiencke..... | Schenectady..... | 28 Jay St. |
| sc | Exton Parsons Wilber..... | Gouverneur..... | Δ Φ House |
| ee | Herman Ferdinand Yotz..... | Otego..... | Pyramid Club |
| cl | John Howarth Young..... | Schenectady..... | Old Gym Dorm. |

Seniors — 107

Juniors, Class of 1923

| | | | |
|----|------------------------------|--------------------|--------------------|
| ee | Clark Clute Aitken..... | Schenectady..... | 22 Union Av. |
| sc | George Anderson | Schenectady..... | Silliman Hall |
| ce | John Crawford Anderson..... | Schenectady..... | Σ Φ Place |
| sc | Gerald Jedson Andrews..... | Guilderland..... | Δ X A House |
| ce | James Armstrong | Cobleskill..... | 325 Avenue A |
| ce | Lewis Havens Avery..... | Seneca Falls..... | Pyramid Club |
| ce | Albert Phillips Bantham..... | Schenectady..... | 220 Parkwood Blvd. |
| ce | Wallace Huldie Barrett..... | Saratoga Springs.. | Old Gym Dorm. |

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|----|--------------------------------|------------------------|--------------------------|-------|-------|
| sc | Francis Bartley | | New York City..... | K A | Lodge |
| cl | John Richard Bauchelle..... | Newark, N. J.. | Mohawk Golf Club | | |
| ee | Francis Michler Bishop..... | Schenectady..... | A Δ Φ | House | |
| sc | Herman Bradt..... | Amsterdam..... | Φ N Θ | House | |
| ee | Erroll Warner Brandenstein.... | Schenectady..... | 26 Haigh Av. | | |
| ce | John Elmer Broderon..... | Schenectady..... | Λ X A | House | |
| sc | Frederick Lidell Bronner..... | Richfield Springs..... | Δ T | House | |
| ce | Herbert Lawrence Brown..... | Adams, Mass..... | Pyramid Club | | |
| ee | Irving Edward Bullard..... | Holyoke, Mass..... | Φ N Θ | House | |
| sc | George Andrew Burgin..... | Albany..... | Φ Δ Θ | House | |
| sc | John Burnham..... | Schenectady..... | Myron St. | | |
| sc | John Miles Cantwell, Jr..... | Malone..... | Σ Φ | Place | |
| ce | Raynard Denaratius Carlson.... | Schenectady..... | Terrace Club | | |
| sc | John Ditmars Carpenter..... | Jamaica..... | Ψ T | House | |
| sc | Edward Hubert Cashion..... | Albany.. | 23 Clifford Rd., Menands | | |
| ce | Raymond Frank Cassedy..... | Gloversville..... | B Θ Π | House | |
| ce | William John Caward..... | Cohocton..... | Φ N Θ | House | |
| sc | John Fraser Clark..... | Albany..... | X Ψ | Lodge | |
| ce | Kenneth Boyd Clarke..... | Schenectady..... | Σ Φ | Place | |
| ce | Elias Israel Cohen..... | Schenectady..... | K N | House | |
| ch | Milton Cohn..... | Schenectady.. | 105 Brandywine Av. | | |
| ce | Harry Mesick Cregier..... | Schenectady..... | R. F. D. No. 1 | | |
| sc | John Joseph Curley..... | Troy..... | 138 President St., Troy | | |
| sc | Robert Le Roy Davis..... | Morristown, N. J..... | Σ Φ | Place | |
| sc | Perry Emigh Deane..... | Hillsdale..... | Terrace Club | | |
| ce | John Vincent Dolan..... | Saranac Lake.... | Old Gym Dorm. | | |
| sc | Donald Templar Dold..... | Buffalo..... | A Δ Φ | House | |
| sc | Joseph Tinning Donnan..... | Schenectady.. | Mohawk Golf Club | | |
| cl | William Richard Galt Duane... | New York City..... | Σ Φ | Place | |
| ee | George Haswell Eaton..... | Schenectady..... | K A | Lodge | |
| ee | Edward Wilson Erdman..... | Hartford, Conn..... | A Δ Φ | House | |
| cl | Louis Faber..... | Schenectady..... | 137 So. Ferry St. | | |
| ce | Jerry Albert Farone..... | Schenectady..... | 141 Romeyn St. | | |
| ch | John W. Finlay..... | Elmira..... | Δ T | House | |
| ce | Eugene Stevens Fisher..... | Englewood, N. J.. | Old Gym Dorm. | | |
| ce | Carl Lewis Forshee..... | Seneca Falls..... | Φ Γ Δ | House | |
| sc | Samuel Beyroth Fortenbaugh... | Schenectady..... | B Θ Π | House | |
| ce | Wallace Van Rensselaer Fretts. | Utica..... | Φ Γ Δ | House | |

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|----|----------------------------------|--|-----------------------|
| sc | Samuel Friedman..... | <i>Poughkeepsie</i> | K A House |
| ee | David Louis Gallup..... | <i>Albany</i> | 34 Cherry St., Albany |
| ee | Charles Edward Gardiner, Jr.... | <i>Johnstown</i> | M. S. S. C. |
| ee | Harry Paul Gaynor..... | <i>Malone</i> | 325 Seward Place |
| sc | Burdett Gibson..... | <i>Schenectady</i> | A Δ Φ House |
| ce | Delwin Harold Gidley..... | <i>Cobleskill</i> | Δ Φ House |
| ee | William Edward Graham..... | <i>Schenectady</i> | K Φ Lodge |
| ce | Clarence Milton Gregg..... | <i>Schenectady</i> | Δ Θ House |
| ch | Everett Helling Grupe..... | <i>Schenectady</i> | 627 Chapel St. |
| cl | Thomas Shaw Hale..... | <i>Schenectady</i> | A Δ Φ House |
| cl | Edward Fitch Hall..... | <i>Schenectady</i> | A Δ Φ House |
| ce | Shiekh Abdul Hamid. . | <i>Rangoon, Hazro, Punjab, India</i> . . | 1496 State St. |
| sc | Elmer Heidorf..... | <i>Hudson Falls</i> | Ψ Υ House |
| ce | Judson Clifford Heindel..... | <i>Albany</i> | 817 State St. |
| sc | Eugene Hellmich, Jr..... | <i>Schenectady</i> | R. F. D. No. 4 |
| ee | Willard Hemedinger..... | <i>Buffalo</i> | K N House |
| sc | John Mauger Hewlett..... | <i>Schenectady</i> | Δ Φ House |
| sc | Clifton Alfred Nicholas Hill.... | <i>Amsterdam</i> | Old Gym Dorm. |
| ce | Anthony de Hothleigh Hoadley. | <i>Swathmore, Pa</i> | K A Lodge |
| ce | Archie Samuel Holmes..... | <i>Downsville</i> | B Θ Π House |
| cl | Edward Niles Hooker..... | <i>Schenectady</i> ... | Φ Δ Θ House |
| sc | Raymond Henry Horstman..... | <i>Schenectady</i> | Δ X A House |
| sc | Caryl Greely Howe..... | <i>Schenectady</i> | 109 Waverly Pl. |
| ce | William Lawrence Howlett..... | <i>Utica</i> | X Ψ Lodge |
| ce | William Earl Jackman..... | <i>Newark, N. J</i> | B Θ Π House |
| ce | John Robert Johnson..... | <i>Andes</i> | Pyramid Club |
| ee | Wendell Wilfred King..... | <i>Waterford</i> .. | 26 2d St., Waterford |
| ce | Elmer Edward Kruse..... | <i>Schenectady</i> | 113 Avenue B |
| ce | Paul H. Lair..... | <i>Gloversville</i> | Pyramid Club |
| ee | George Anthony Lenz..... | <i>Schenectady</i> | 70 Fiero Av. |
| sc | Charles Ranney Lewis..... | <i>North Troy</i> | Θ Δ Φ House |
| ce | Edward Charles de Lima..... | <i>New York City</i> | Ψ Υ House |
| sc | Henry Robert Loomis..... | <i>Burlington, Vt</i> | Φ Δ Θ House |
| ee | Alfred Cadwell MacBurney.... | <i>Middletown</i> | B Θ Π House |
| cl | Bruce King MacLaury..... | <i>Schenectady</i> | Pyramid Club |
| ee | Ormond Hasbrook Mann..... | <i>South Schodack</i> | Δ X A House |
| ee | William James McCraig..... | <i>Buffalo</i> | Δ Θ House |
| sc | John Harold McGauley..... | <i>Schenectady</i> | 812 Hamilton St. |

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|-----------|---------------------------------|--------------------------------|---------------------|
| <i>ce</i> | James Donald McKenzie..... | <i>Buffalo</i> | B Θ Π House |
| <i>sc</i> | Charles K. Messmer..... | <i>Schenectady</i> | 119 Front St. |
| <i>ce</i> | Ernest Philip Meyer..... | <i>Tuxedo Park</i> | Φ Δ Θ House |
| <i>ce</i> | Richmond Frederic Meyer..... | <i>Tuxedo Park</i> | Φ Δ Θ House |
| <i>sc</i> | Geoffrey Arthur Mottsmith..... | <i>Schenectady</i> | 1 Bedford Rd. |
| <i>sc</i> | Edmund B. Naylor..... | <i>Schenectady</i> | K A Lodge |
| <i>sc</i> | Ralph Francis Nevin..... | <i>Holyoke, Mass.</i> | Φ N Θ House |
| <i>ch</i> | George Nichols, Jr..... | <i>Buffalo</i> | K Φ House |
| <i>ce</i> | Richard Randolph Oram..... | <i>Tuxedo Park</i> | Φ Δ Θ House |
| <i>cl</i> | William Chalmers Ostrom..... | <i>Schenectady</i> | Pyramid Club |
| <i>ce</i> | Robert George Owen Parry.... | <i>Clinton</i> | Terrace Club |
| <i>sc</i> | Roger Williams Patterson..... | <i>New York City</i> | A Δ Φ House |
| <i>sc</i> | Walter Pennington | <i>Schenectady</i> | 105 Edward St. |
| <i>ee</i> | Kirkwood E. Personius..... | <i>Elmira</i> | Δ Θ House |
| <i>ch</i> | Joseph John Piekny..... | <i>Schenectady</i> | 109 Eighth Av. |
| <i>sc</i> | Harold Becker Platner..... | <i>Stamford</i> | Pyramid Club |
| <i>ce</i> | John Porter | <i>Swampscott, Mass.</i> | K A Lodge |
| <i>ch</i> | George David Read, Jr..... | <i>Bath</i> | M. S. S. C. |
| <i>cl</i> | Frank Andrew Reed..... | <i>Schenectady</i> | 301 Seward Pl. |
| <i>sc</i> | Raymond Garret Rice..... | <i>Schenectady</i> | Δ Θ House |
| <i>sc</i> | Claude Clifford Rich..... | <i>Schenectady</i> | Δ T House |
| <i>ch</i> | Harold Niles Rowe..... | <i>Schenectady</i> | 9 Park Pl. |
| <i>sc</i> | Ralph Horton Rue..... | <i>Schenectady</i> | 1009 Union St. |
| <i>sc</i> | Herbert Allen Sanderspree.... | <i>Fort Edward</i> | Old Gym Dorm. |
| <i>sc</i> | James Teller Schoolcraft, Jr... | <i>Schenectady</i> | X Ψ Lodge |
| <i>sc</i> | Lewis Beck Sebring, Jr..... | <i>Schenectady</i> | 320 Summit Av. |
| <i>ce</i> | Harold Ankers Sheldon..... | <i>Poughkeepsie</i> | K Φ Lodge |
| <i>ce</i> | John Banks Sherwood..... | <i>Southport, Conn.</i> | Δ T House |
| <i>ce</i> | Harold George Simmons..... | <i>Akron, O.</i> | Φ Γ Δ House |
| <i>ce</i> | Donald Elmore Slack..... | <i>Albany</i> | Φ N Θ House |
| <i>cl</i> | Kenneth Wilson Smead..... | <i>Luzerne</i> | Old Gym Dorm. |
| <i>ce</i> | George Henry Smith..... | <i>Schenectady</i> | Δ X A House |
| <i>sc</i> | Lawrence Richard Smith..... | <i>Richfield Springs</i> | Terrace Club |
| <i>cl</i> | Malcolm Davry Springer..... | <i>Troy</i> | 401 Tenth St., Troy |
| <i>ee</i> | Raymond Henry Stoetzel..... | <i>Schenectady</i> | 706 Brandywine Av. |
| <i>ce</i> | David Strain | <i>Albany</i> | Terrace Club |
| <i>ce</i> | William Henry Stringfellow.... | <i>Schenectady</i> | 123 Parkwood Blvd. |
| <i>sc</i> | John Robert Sutton, Jr..... | <i>Detroit, Mich.</i> | Σ Φ Place |

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|----|----------------------------------|----------------------|-------------------------|
| ee | Carroll Fletcher Terwilliger.... | Schenectady.. | 312 Parkwood Blvd. |
| ch | Raymond Henry Thielking..... | Amsterdam.. | 53 Arnold Av., Am'm |
| ce | Theodore Richard Townley.... | Schenectady..... | 301 Victory Av. |
| ee | Dimitri S. Trone..... | Schenectady.. | 35 Parkwood Blvd. |
| ce | Carey Chamberlain Tubbs..... | Cooperstown.... | Φ N Θ House |
| ee | James Henry Turnbull..... | Schenectady.... | 1 Parkwood Blvd. |
| sc | George Claus Von Borstel..... | Wappinger Falls..... | K Φ Lodge |
| ch | Alonzo Taylor Waterhouse.... | Albany.. | 263 Western Av., Albany |
| sc | John Stover Welling..... | Hudson Falls..... | Δ Φ House |
| ch | George Henry Whipps..... | Auburn..... | Δ Θ House |
| sc | Paul Mead Wilber..... | Schenectady..... | X Ψ Lodge |
| sc | Herbert Willetts..... | Troy..... | Δ X A House |
| e | Layton Allen Zimmer..... | Rochester..... | K A Lodge |

Juniors — 135

Sophomores, Class of 1924

| | | | |
|----|--------------------------------|------------------------|-------------------|
| sc | Harold Thomas Andrews..... | Gloversville..... | Δ T House |
| ee | Richard Simmons Arthur..... | Gloversville..... | Pyramid Club |
| ee | John Stothoff Badeau..... | New Brunswick, N. J., | Silliman Hall |
| ce | Leicester Newton Baker.... | Martinsburg, W. Va.... | Σ Φ Place |
| ee | Charles Raymond Barhydt..... | Carman | Carman |
| ee | Douglas Langley Barrett..... | Katonah..... | K A Lodge |
| ee | Charles Willard Barton..... | Oswego..... | Δ X A House |
| ee | Norman Lawrence Bates, Jr.... | Oswego..... | Ψ T House |
| ee | Henry West Baukat..... | Batavia..... | X Ψ Lodge |
| sc | Guy Beattie..... | Waterliet..... | K Φ Lodge |
| sc | Northrop Terry Bellinger..... | New York City..... | Ψ T House |
| ee | Jetson Oliver Bentley..... | Schenectady.. | 71 Eastholm Blvd. |
| sc | William Cahill Bergh..... | Gloversville..... | Δ X A House |
| ee | Victor Bettini..... | New York City | K A Lodge |
| sc | Charles Reynell Bidelman..... | Albion..... | Ψ T House |
| ce | Arthur Blessing..... | Schenectady..... | 1813 Broadway |
| ee | Lewis Howard Bonney..... | Pulaski..... | M. S. S. C. |
| ee | Nathaniel Mortimer Bowie, Jr.. | Rochester..... | Σ Φ Place |
| ee | Mitchell McGuire Bowman.... | Petersburg, Va..... | K A Lodge |
| ee | Kenneth Barnard Brandenburg. | New York City..... | Ψ T House |
| cl | David McKenna Brockway.... | Albany..... | Δ Φ House |
| ee | Maurice James Brown..... | Liberty..... | Δ T House |

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|-----------|---------------------------------|--|--------------------------------|
| <i>sc</i> | Clinton Vail Bull..... | <i>Bloomingsburgh.....</i> | Δ Υ House |
| <i>ce</i> | Arthur Cortez Bussy..... | <i>Arena.....</i> | Φ N Θ House |
| <i>cl</i> | Franklin Arnold Butts..... | <i>Poughkeepsie.....</i> | B Θ Π House |
| <i>sc</i> | Donald Forrester Cameron..... | <i>Amsterdam.....</i> | Φ Γ Δ House |
| <i>cl</i> | John Miller Carroll..... | <i>Johnstown.....</i> | A Δ Φ House |
| <i>sc</i> | Lester McCormick Carson..... | <i>Toinesta, Pa.....</i> | K Φ Lodge |
| <i>ce</i> | William John Chevalier..... | <i>Holyoke, Mass.....</i> | K Φ Lodge |
| <i>sc</i> | Donald Holmes Clark..... | <i>Pulaski.....</i> | B Θ Π House |
| <i>cl</i> | Morris Marshall Cohn..... | <i>Schenectady.....</i> | Z B T House |
| <i>ce</i> | Morris Merrill Cohn..... | <i>Schenectady.....</i> | K N House |
| <i>ch</i> | Edwin Wallace Colt..... | <i>Schenectady..214 Parkwood Blvd.</i> | |
| <i>sc</i> | George Ira Coons..... | <i>Middleburgh.....</i> | Φ N Θ House |
| <i>sc</i> | Charles Anthony Criqui, Jr..... | <i>Buffalo.....</i> | A Δ Φ House |
| <i>sc</i> | Thalen Leon Cross..... | <i>Fort Plain.....</i> | Φ Γ Δ House |
| <i>cl</i> | Francis Charles Culkin..... | <i>Fulton.....</i> | Δ Θ House |
| <i>ee</i> | James Westford Cutler..... | <i>Westfield, N. J.....</i> | Σ Φ Place |
| <i>pm</i> | Elbert Dalton..... | <i>Schenectady.....</i> | A Δ Φ House |
| <i>ee</i> | George Ernest Dana..... | <i>Cooperstown.....</i> | Φ N Θ House |
| <i>ch</i> | Richard Dardess..... | <i>Chatham.....</i> | Terrace Club |
| <i>sc</i> | Charles Gay Davis, Jr..... | <i>Madison, N. J.....</i> | Σ Φ Place |
| <i>sc</i> | Orin Leslie Donald..... | <i>Middletown.....</i> | Φ Γ Δ House |
| <i>sc</i> | Arthur Edwin DuBois..... | <i>Bethel.....</i> | Φ N Θ House |
| <i>ee</i> | Howard Kenneth Dunbar..... | <i>Lowville.....</i> | 1234 Union St. |
| <i>ee</i> | Edgar Daniel Dunning..... | <i>Ilion.....</i> | Φ Γ Δ House |
| <i>ce</i> | Frederick Leo Eighmie..... | <i>So. Schenectady..</i> | <i>So. Schenectady</i> |
| <i>ee</i> | Donald Failing..... | <i>New York City.....</i> | Δ Φ House |
| <i>sc</i> | Asa Walker Fairgrieve..... | <i>Bantam, Conn.....</i> | Δ Υ House |
| <i>ee</i> | James Harvey Ford..... | <i>Little Falls.....</i> | Δ Υ House |
| <i>sc</i> | Stanley Livingstone Garnjost... | <i>Yonkers.....</i> | B Θ Π House |
| <i>pm</i> | Martin Francis Geruso..... | <i>Mechanicville....</i> | 103 Nott Terrace |
| <i>sc</i> | John Everett Glenn..... | <i>Elsmere.....</i> | Σ Φ Place |
| <i>sc</i> | Bernard Golub..... | <i>Schenectady.....</i> | 615 Lenox Rd. |
| <i>sc</i> | Albert Fillis Goodwin..... | <i>New York City..4 No.</i> | Colonnade |
| <i>ee</i> | Harry James Goodwin..... | <i>Watertown.....</i> | Terrace Club |
| <i>ch</i> | Marcus Myer Graubart..... | <i>Schenectady.....</i> | K N House |
| <i>ee</i> | Elmer William Hafner..... | <i>Rochester.....</i> | Φ Δ Θ House |
| <i>sc</i> | Harold Miller Hallenback..... | <i>Hudson.....</i> | Δ Υ House |
| <i>sc</i> | Thomas Roland Hanrahan..... | <i>Schenectady..</i> | 16 So. Wendell Av. |

- ee* Charles Fairchild Harnish.....*Honeoye Falls*.....B Θ Π House
sc Frederick Bernard Hartnett....*Fulton*.....Φ Δ Θ House
cl Oswald David Heck.....*Schenectady*.....32 Columbia St.
sc Edwin Richard Hemstreet.....*Mechanicville*.....Δ Θ House
sc Clarence Raymond Hix.....*Fort Plain*.....Δ Φ House
pm Abraham Julius Hollander.....*Brooklyn*.....K N House
sc John Clarke Holmes.....*Katonah*.....K A Lodge
sc Ernest Merell Hotaling.....*Cooperstown*.....Δ T House
ee George Leland Hughes. *Amsterdam*..305 Locust Av., Amsterdam
sc Reed Davidson Hummer.....*Ravena*.....K A Lodge
ee Edson Deloss Huntley.....*New Woodstock*..30 Bedford Rd.
ee Max Israel.....*Newburgh*.....K N House
ee Edward Montgomery Jones.....*Syracuse*.....Δ X A House
sc Douglas White Joslyn.....*Albany*.....Ψ T House
ee William Bernard Kingston....*Little Falls*.....Δ T House
cl George Henry Kling.....*West Sand Lake*.....N. S. N. C.
pm Chester William Krusie.....*Schenectady*.....209 Avenue A
ch George Kendall Ladd.....*Albany*.....X Ψ Lodge
sc Arthur Henry Lamborn.....*Albany*.....207 Kent St., Albany
sc Lauriston Job Lane, Jr.....*Sao Paulo, Brazil*.....Σ Φ Place
sc William Francis La Pan.....*Saranac Lake*.....Δ T House
sc William Martin Leonard.....*Schenectady*.....405 Lenox Rd.
sc Jasper Samuel Levine.....*Schenectady*.....43 Wendell Av.
ee Maurice Lewis Levy.....*Rochester*.....K N House
ee Ernest Glenn Liberty.....*Rotterdam Jct*.....Φ N Θ House
ce Theodore Lifset.....*Schenectady*.....K N House
sc Gilbert Robert Livingston.....*Nutley, N. J*.....Σ Φ Place
ee Richard Wood Lottridge.....*Stillwater*.....Pyramid Club
ee Donald Clute Mackintosh.....*Schenectady*.....X Ψ Lodge
ee Donald Howard Malcolm.....*Boonville*.....Old Gym Dorm.
sc John Thomas Manion.....*Herkimer*.....Old Gym Dorm.
pm Frank Anthony Mastrianni....*Mechanicville*...103 Nott Terrace
sc Kenneth McIntyre*Watervliet*.....Δ Θ House
sc Ronald Joseph McNamee.....*Amsterdam*.....Terrace Club
ee Charles Sholtes Mix.....*Schoharie*.....Δ Φ House
ee Raymond Dexter Moore.....*Northville*.....20 No. Church St.
sc Clinton Burdick Morgan.....*Rockville Centre*...B Θ Π House
sc Charles Edward Munsell, Jr....*Schenectady*.....51 Haigh Av.

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|-----------|---------------------------------|--|--------------------------|
| <i>sc</i> | Alvin Frederick Nitchmann..... | <i>Schenectady</i> ... | 408 Brandywine Av. |
| <i>ee</i> | James Lewis Noecker..... | <i>Renovo, Pa.</i> | Φ Γ Δ House |
| <i>pm</i> | Maurice Gilbert Osborne..... | <i>Northville</i> | K Φ Lodge |
| <i>ee</i> | Wallace Crawford Palmer..... | <i>Woodhaven</i> | K A Lodge |
| <i>sc</i> | Robert Henry Pidge..... | <i>Fultonville</i> | Fultonville |
| <i>sc</i> | Harry Nery Pitt, Jr..... | <i>Albany</i> | Φ Δ Θ House |
| <i>ee</i> | Charles Rodney Pitts..... | <i>Lachute Mills, P. Q., Canada</i> , 1375 Union St. | |
| <i>sc</i> | Willard Augustus Pleuthner.... | <i>Buffalo</i> | A Δ Φ House |
| <i>sc</i> | Harold John Potts..... | <i>Bethel</i> | Φ N Θ House |
| <i>pm</i> | George Israel William Racette.. | <i>Schenectady</i> | Λ X A House |
| <i>ee</i> | Raoul William Racette..... | <i>Schenectady</i> | 414 Hulett St. |
| <i>sc</i> | William Reid, Jr..... | <i>Schenectady</i> ... | 1025 Delamont Av. |
| <i>sc</i> | Frederic Abram Reynolds..... | <i>Schenectady</i> | Ψ T House |
| <i>ch</i> | Neil Bailey Reynolds..... | <i>Scotia</i> | 24 Riverside Av., Scotia |
| <i>sc</i> | Mac Laren Richards..... | <i>Hudson Falls</i> | Ψ T House |
| <i>sc</i> | Frederick William Ritz..... | <i>Sag Harbor</i> | Λ X A House |
| <i>pm</i> | Kalmon Rosenblatt..... | <i>Albany</i> | North Colonnade |
| <i>ce</i> | Morris Roses..... | <i>Schenectady</i> | 219 Second Av. |
| <i>ee</i> | Roger Pritchard Rynders..... | <i>Syracuse</i> | Λ X A House |
| <i>pm</i> | Hyman Sacharoff..... | <i>Schenectady</i> ... | 304 Congress Street |
| <i>pm</i> | Simon Saltman..... | <i>Coney Island</i> | K A Lodge |
| <i>ee</i> | Karl Clifford Saunders..... | <i>Seneca Falls</i> | M. S. S. C. |
| <i>ee</i> | Harold Lavern Saxton..... | <i>Fort Plain</i> | Φ Γ Δ House |
| <i>ch</i> | Philip Benjamin Schamberger.. | <i>Gloversville</i> | Pyramid Club |
| <i>pm</i> | Kalman Wellington Schneider.. | <i>Nassau</i> | K N House |
| <i>sc</i> | Edward Charles Schroedel.... | <i>Rochester</i> | Φ Δ Θ House |
| <i>ee</i> | Laurence Frederic Shaffer..... | <i>Johnstown</i> | Silliman Hall |
| <i>sc</i> | John Redmond Sheehan, Jr.... | <i>Schenectady</i> | B Θ Π House |
| <i>sc</i> | Clarke Winship Slade..... | <i>Albany</i> | Δ Φ House |
| <i>sc</i> | Douglas Small..... | <i>Schenectady</i> | 16 Lake Blvd. |
| <i>ce</i> | Momlaung Chiew Snitwongse... | <i>Bangkok, Siam</i> | N S. S. C. |
| <i>ee</i> | Earl Edward Steinert..... | <i>Schenectady</i> | 805 Craig St. |
| <i>cl</i> | William Patrick Stewart..... | <i>Buffalo</i> | X Ψ Lodge |
| <i>ee</i> | Burton Augustus Stilson..... | <i>Franklin</i> | Δ Φ House |
| <i>ee</i> | Walter Roland Stock..... | <i>Anniston, Ala.</i> | 844 Union St. |
| <i>ch</i> | Edward Christian Strube..... | <i>Schenectady</i> | 35 Lafayette St. |
| <i>sc</i> | Andrew Jackson Switzer..... | <i>Bath</i> | Δ Θ House |
| <i>ee</i> | Van Keuren Wade Tasker.... | <i>Schenectady</i> | 102 Park Av. |

| | | | |
|-----------|--------------------------------|------------------------------|-----------------|
| <i>sc</i> | Archibald Taylor, Jr..... | <i>Middletown</i> | B Θ II House |
| <i>cl</i> | J. Stanley Taylor..... | <i>Voorheesville</i> | Δ T House |
| <i>pm</i> | James Tesler..... | <i>Brooklyn</i> | North Colonnade |
| <i>ee</i> | Franklin McCown Thompson... | <i>Lexington, Va</i> | Σ Φ Place |
| <i>sc</i> | Harold Edward Townsend.... | <i>Amsterdam</i> | Φ Γ Δ House |
| <i>sc</i> | Benjamin Robertson Turner, Jr. | <i>Mt. Sterling, Ky</i> | Φ Δ Θ House |
| <i>sc</i> | Dwight Van Avery..... | <i>Schenectady</i> | Pyramid Club |
| <i>cl</i> | Horace Silliman Van Voast, Jr. | <i>Schenectady</i> | Ψ T House |
| <i>ch</i> | Arthur Andrew Vernon..... | <i>Schenectady</i> | 703 Crane St. |
| <i>sc</i> | Edward Lloyd Walker..... | <i>Greene</i> | Φ N Θ House |
| <i>sc</i> | Cecil Myers Waterbury..... | <i>East Schodack</i> | Δ T House |
| <i>sc</i> | Edwin Payne Waterman..... | <i>Little Falls</i> | Δ T House |
| <i>ee</i> | Warren W. White..... | <i>Pittsford</i> | Δ T House |
| <i>cl</i> | Elwyn Donald Wilsey..... | <i>Greenfield Center</i> ... | Δ X A House |
| <i>sc</i> | Charles Stanley Wright..... | <i>Newark</i> | B Θ II House |
| <i>ce</i> | Charles Braman Zeitler..... | <i>Pittsford</i> | Φ Γ Δ House |

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Freshmen, Class of 1925

| | | | |
|-----------|-------------------------------|---|-----------------|
| <i>ac</i> | Marcus Aurélius Abbott..... | <i>Buffalo</i> | B Θ II House |
| <i>ac</i> | Robert Henry Abrahamson.... | <i>New York City</i> | Z B T House |
| <i>ec</i> | Kingsley Warhurst Aldridge... | <i>Brooklyn</i> | K A Lodge |
| <i>ac</i> | Dana William Allen..... | <i>Wellsburg</i> | Φ Γ Δ House |
| <i>ch</i> | Lee Milton Arbegast..... | <i>Carlisle, Pa</i> | Δ X A House |
| <i>ac</i> | Kenneth MacLean Archibald... | <i>Cohoes</i> ...263 Remsen St., | Cohoes |
| <i>ac</i> | Leslie Homer Backus..... | <i>Schenectady</i> ...1001 Delamont Av. | |
| <i>ce</i> | Clarence Knapp Bagg..... | <i>Binghamton</i> | Σ Φ Place |
| <i>ee</i> | William Walker Baird..... | <i>Gloversville</i> | Φ Γ Δ House |
| <i>ch</i> | Howard Ellsworth Baker..... | <i>Schenectady</i> ...1906 Eastern Pkway | |
| <i>ee</i> | Harold Norton Barnes..... | <i>Little Falls</i> | Δ T House |
| <i>ce</i> | Henry Howell Bartlett..... | <i>Poughkeepsie</i> | A Δ Φ House |
| <i>ac</i> | Lewis Hall Bartlett..... | <i>Freeport</i> | Δ Φ House |
| <i>ce</i> | Clare Franklin Beames, Jr.... | <i>Yonkers</i> | A Δ Φ House |
| <i>ee</i> | George Calvin Beckwith..... | <i>Mount Vernon</i> | Φ Γ Δ House |
| <i>ee</i> | Leslie Laurence Beehring..... | <i>Schenectady</i> ...219 Van Vrank'n Av. | |
| <i>ee</i> | Martin Elsworth Bellew..... | <i>Worcester</i> | 26 Nott Terrace |
| <i>ee</i> | Ralph Bertil Bernson..... | <i>Schenectady</i> | R. F. D. 7 |
| <i>ee</i> | Alvin Paul Boettcher..... | <i>Albany</i> ...R. F. D. 1, | West Albany |

| | | | | | |
|----|------------------------------|----------------------|---|---|----------------------|
| ee | Nelson Botsford | Rutherford | Δ | Υ | House |
| ac | Thomas Dickinson Boyles | Schenectady | Σ | Φ | Place |
| ac | Henry Austin Brand | Central Bridge | Ψ | Υ | House |
| ac | John Joseph Brophy | Schenectady | | | 625 Rugby Rd. |
| ac | Leon Wono Brown | Schenectady | | | 735 Albany St. |
| ee | James Wayne Brubaker | Mountain View, N. J. | | | Old Gym Dorm. |
| ac | Franklin Farbridge Bruder | New York City | Ψ | Υ | House |
| ac | Thomas Kennedy Bruton | East Orange, N. J. | B | Θ | Π House |
| ee | Charles Petford Buckley, Jr. | Baldwin | Δ | Φ | House |
| ac | Alexander Campbell | Rochester | | | 103 Nott Terrace |
| ce | George Melville Campbell | Bronxville | B | Θ | Π House |
| ch | Leland Eugene Campbell | Scotia | | | R. F. D. 1, Scotia |
| pm | Robert Ellsworth Carter | Albany | | | 94 Third St., Albany |
| ch | Kenneth Kuo Chun Chao | Shanghai, China | | | N. S. S. C. |
| ac | Alan Lake Chidsey | Easton, Pa. | A | Δ | Φ House |
| ee | Frederick George Clark | Buffalo | Ψ | Υ | House |
| pm | Gilbert Arden Clark | North Troy | | | 1007 Nott St. |
| ac | Benjamin Edwin Cohen | Glens Falls | K | N | House |
| ee | Oscar Beryl Archer Colker | Newport, Ky. | Δ | Θ | House |
| ab | George Arthur Collins | Gloversville | Δ | Φ | House |
| ee | Russell Burton Cooper | Schenectady | | | 1032 Eastern Av. |
| ac | Hiram Edward Cornell | Schenectady | | | 317 Seward Place |
| ac | Ernest Francis Cowles | New York City | A | Δ | Φ House |
| ee | Donald Leonard Cramer | Holyoke, Mass. | Σ | Φ | Place |
| ce | Herman Crannell | Schenectady | A | Δ | Φ House |
| ee | Walter Read Crocker | Utica | Φ | Γ | Δ House |
| pm | Clarence Crowter | Northville | | | Old Gym Dorm. |
| ee | Wallace Barnes Curtis | Philadelphia, Pa. | | | 11 Wendell Av. |
| ac | Everett Davenport | Schenectady | | | 11 Chestnut St. |
| ac | John Warford Davis | Hudson Falls | Ψ | Υ | House |
| ce | Willard Lucius Davis | Binghamton | Ψ | Υ | House |
| ee | Gordon Waterman Davison | Worcester | | | North Colonnade |
| ee | Raymond Terhune Dawes | Montclair, N. J. | | | 30 Union Av. |
| ee | James Ayers Dawson | Schenectady | | | 110 Elm St. |
| ch | William Worden Day | Schenectady | | | R. F. D. 7 |
| ac | Kenneth Delmondt Dean | Schenectady | | | 16 Eagle St. |
| ac | David McClellan De Forest | Schenectady | | | 115 Henry St. |
| ee | Samuel George Deiratani | Mersina, Asia Minor | | | 623 Liberty St. |

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|----|--------------------------------|---------------------|-------------------------|
| ee | Austin Joseph Deming..... | Elizabethtown..... | Δ X A House |
| ee | Clarence Dey | Johnstown..... | N. S. N. C. |
| pm | George Gismond Di Cenzo.... | New Haven, Conn.... | N. S. N. C. |
| ee | Leslie Edwin Diven..... | Little Falls..... | Δ Θ House |
| ee | Henry Ellis Dodd..... | Bogota, N. J.... | 11 N. Wendell Av. |
| ee | Kenneth Tryon Doolittle..... | Watertown, Conn.... | 24 N. Wendell Av. |
| ee | Harold Alvin Dorn..... | Schenectady..... | 121 Elmer Av. |
| ee | Robert Marshall Downs..... | Omaha, Neb..... | X Ψ Lodge |
| ac | George Thomas Drohan..... | Schenectady..... | B Θ Π House |
| ab | Philip Hunter Du Bois..... | Newburgh..... | N. S. S. C. |
| ac | Lewis Orr Dunn..... | Scotia..... | 16 Cuthbert St., Scotia |
| pm | John Michael Dunphy..... | Schenectady..... | 1001 Nott St. |
| ee | Robert Grosvenor Ely..... | Schenectady..... | A Δ Φ House |
| ac | Raymond John Endries..... | Schenectady..... | 322 Schenectady St. |
| ch | Edward William Engel... | Amsterdam... | 24 Bunn St., Amsterdam |
| pm | George A. Ensign, Jr..... | Stillwater..... | Δ Θ House |
| ch | Robert Edwin Felton..... | Schenectady..... | 1529 Union St. |
| ac | John Giles Ferres, II..... | Johnstown..... | X Ψ Lodge |
| ce | Samuel Feuer | Schenectady..... | 634 Chrisler Av. |
| ee | Cary Bouck Fish..... | Albion..... | N. S. S. C. |
| ce | James Kenneth Fraser..... | Johnstown..... | Terrace Club |
| ac | Edward Hartley Freeman..... | Kenwood..... | Δ Υ House |
| ac | Elwyn Henry Freeman..... | Plattsburg..... | Φ Δ Θ House |
| ce | Thomas Johnson French..... | Austin, Penna..... | Φ Γ Δ House |
| ce | Gordon Leslie Frohlich..... | Amsterdam..... | North Colonnade |
| pm | Louis Gaetano | Schenectady..... | 533 Paige St. |
| ee | Albert Barber Sprague Gallup.. | Moosup, Conn..... | N. S. N. C. |
| ee | Theodore Ganung | West Haven, Conn.. | .K Φ Lodge |
| ee | Eric Berger Gardell..... | Oakhurst, N. J.... | Φ N Θ House |
| pm | George Albert Gilbert..... | Schenectady..... | 1007 Nott St. |
| ee | Harold Frederic Gilman..... | Palmyra..... | Stop 10, Troy Rd. |
| ac | Jacob David Glaubach..... | Brooklyn..... | K N House |
| ac | Leland Holsapple Goddard.... | Schenectady.... | 225 Nott Terrace |
| pm | Nathan Harris Goldstein..... | Schenectady..... | 64 Robinson St. |
| ce | Milton Elwyn Goul..... | Schenectady..... | 213 Victory Av. |
| ee | Robert Harley Greene..... | Beacon..... | B Θ Π House |
| ab | Russell Lester Greenman..... | Albany..... | X Ψ Lodge |
| ee | Francis John Greisler..... | Schenectady..... | 778 Albany St. |

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|----|------------------------------|-------------------------------|-----------------------------|
| ee | Sylvester Jacob Haefner... | <i>Rensselaer</i> ... | 1562 Fourth St., Rensselaer |
| ab | Elmer Nicholas Haley..... | <i>Scotia</i> | 22 Halcyon St., Scotia |
| ee | Guy Cawgill Hamilton..... | <i>Long Island City</i> ... | Pyramid Club |
| ee | Harris Burrigide Hammond.... | <i>Pittsford</i> | North Colonnade |
| ac | Kenneth Van Ness Harris..... | <i>Schenectaday</i> | 701 Becker St. |
| ce | Ernest Albert Hawes..... | <i>Schenectady</i> | 6 Euclid Av. |
| ee | Charles Allen Hayden..... | <i>Floral Park</i> | B Θ Π House |
| ee | Reuben Dexter Head..... | <i>Medusa</i> | Old Gym Dorm. |
| ee | John Alfred Hearn..... | <i>Schenectady</i> | 13 Norwood Av. |
| ee | Clarence Alfred Helene..... | <i>Salamanca</i> | N. S. S. C. |
| ac | Isaac Meyer Hinden..... | <i>Schenectady</i> | 635 Hamilton St. |
| ee | Jeremiah Israel Hinden..... | <i>Schenectady</i> | 635 Hamilton St. |
| pm | George Carl Hock..... | <i>Newark, N. J.</i> | 123 Glenwood Blvd. |
| pm | William Alfred Horwitz..... | <i>Albany</i> | 203 McClellan St. |
| ch | Francis Aubrey Howard..... | <i>Norwalk, Conn.</i> | Pyramid Club |
| ch | James Cleary Howgate..... | <i>Schenectady</i> | Δ T House |
| ac | Robert Lee Hoxie..... | <i>St. Louis</i> | X Ψ Lodge |
| ce | George William Hull..... | <i>Schenectady</i> | 42 Ballston Rd. |
| ac | Edward Maxwell Iverson..... | <i>Schenectady</i> | 11 Forest Rd. |
| ee | Amos Blinn Jaquith..... | <i>Schuylerville</i> | N. S. S. C. |
| ac | Leland Stephen Jones..... | <i>Cobleskill</i> | N. S. N. C. |
| ad | Harry Kaplan | <i>Arkville</i> | K N House |
| ac | Norman Dudley Kathan..... | <i>Schenectady</i> | 621 Union St. |
| ee | William Joseph Keegan..... | <i>Ferndale</i> | 103 Nott Terrace |
| ac | Paul Kells | <i>Wilmington, N. C.</i> | Ψ T House |
| ac | Samuel Kessler | <i>Albany</i> | Z B T House |
| ee | David Moland Kirk, Jr..... | <i>Delmar</i> | Terrace Club |
| ee | Knud Elmer Kjolseth..... | <i>Scotia</i> | 136 Vley Rd., Scotia |
| ce | Lester Leroy Klapper..... | <i>Schenectady</i> | 44 Snowden Av. |
| ce | Arthur Alan Klein..... | <i>Schenectady</i> | 316 Germania Av. |
| ce | Gulick Zeitler Knight..... | <i>Rochester</i> | Φ Γ Δ House |
| ce | Ernest Richard Koth..... | <i>Austin, Penna.</i> | Φ Γ Δ House |
| ee | Clarence George Kunze..... | <i>Middletown, Conn.</i> | Φ N Θ House |
| ad | Harold Reals Lair..... | <i>Pattersonville</i> | Pattersonville |
| ac | Ralph Newton Litzell..... | <i>Albany</i> | Φ Δ Θ House |
| ee | Worthington Compton Lent.... | <i>Ridgefield Park, N. J.</i> | Δ Θ House |
| ac | Ralph Clayton Leonard..... | <i>Albany</i> ... | 141 Ontario St., Albany |
| ch | Henry Adolph Letteron | <i>Scotia</i> | 49 Holmes St., Scotia |

- ee* John Albert Lincoln.....*Schenectady*.....42 Haigh St.
ac Timothy Lomasney*Schenectady*....1018 Eastern Av.
pm Francis Furbeck Long.....*Albany*.....Δ T House
ae Daniel Pettinger Loomis.....*Burlington, Vt.*.....Φ Δ Θ House
ac Gordon Macfarlane*Brooklyn*.....K A Lodge
ac Richard Cullen MacLean.....*Schenectady*.....9 Morris Av.
pm Robert Johnston Mann.....*Saratoga Springs*,
120 York Av., Saratoga Sp.
ac Malcolm Gilchrist Marks.....*Gloversville*.....Φ Δ Θ House
pm Frank Marra*Schenectady*....12 No. Center St.
ee Karl Philip Marx.....*Schenectady*.....816 Lincoln Av.
ch Emmett Charles Mattern.....*West Rush*.....B Θ Π House
ac James Irving Matthews.....*Buffalo*.....B Θ Π House
ce Lewis Warren Mauger.....*Schenectady*..29 Parkwood Blvd.
ee Walter Benjamin Maxwell.....*Schenectady*..216 Guilderland Av.
ee Elmer Dale McArthur.....*Salamanca*.....N. S. S. C.
ee Robert Charles McCord.....*Mineola*.....Pyramid Club
ee Robert Hugh McGuigan.....*Newburgh*.....Terrace Club
ab Jerome Clement Meader.....*Ft. Wayne, Ind.*.....N. S. S. C.
pm William Martin Memolo.....*Old Forge, Pa.*....131 Romeyn St.
ab Evalon Artemus Merritt.....*New Hartford*.....Terrace Club
ee Albert Edward Milligan, Jr....*Schuylerville*.....M. S. S. C.
pm George Ross Mills.....*Highland Lake*.....Φ N Θ House
ac John English Minahan.....*Albany*.....X T Lodge
ee George Allen Moles.....*Holyoke, Mass.*.....B Θ Π House
ee Wilbur Adams Moore.....*Cranford, N. J.*.....30 Union Av.
ee Henry Crabb Brooks Morris...*Schenectady*....1202 Eastern Av.
pm John Fayette Mosher.....*Northville*.....Pyramid Club
pm Raymond Leroy Myrick.....*Schenectady*....174 Division St.
ce Ogden Hoffman Neely.....*Rochester*.....B Θ Π House
ee Edwin Paul Neilson.....*Buffalo*.....405 Union St.
ch Thomas Edwin Niles.....*Chatham*.....Terrace Club
ce Edward Lewis North.....*Guilford*.....Ψ T House
ac John Joseph O'Connell.....*Plattsburg*.....836 Emmett St.
ac Acker Ottman*Schenectady*.....1243 State St.
ac David Owen Owens, Jr.....*Granville*.....102 Park Av.
ee Franklin McMullen Page.....*Chappaqua*.....A Δ Φ House
pm Max Emanuel Panitch.....*Nassau*.....K N House

- ee* Howard Eager Pierson.....*Warwick*.....Pyramid Club
ac Richard Merle Poole.....*Rockville Centre*.....Δ Θ House
ab John Snare Post.....*Troy*.....232 Glen Av., Scotia
ee Earl William Powell.....*Schenectady*...1233 Campbell Av.
ce Thomas Edwin Pritchard.....*Granville*.....1007 Nott St.
pm Fiore Maria Rainone.....*Schenectady*..515 Van Vranken Av.
ee Edmund Bush Redington.....*Waverly*.....Ψ Υ House
ch James Carter Rice.....*Schenectady*.....117 Foster Av.
ac Andrew Jerome Rich, Jr.....*Buffalo*Σ Φ Place
ac John Paul Riley, Jr.....*Schenectady*.....5 Stratford Rd.
pm John Paul Rinaldi.....*Schenectady*.....7 Main Av.
ee Cornelius Philip Robinson.....*Walton*.....N. S. N. C.
ee Lewis Robinson*Schenectady*.....Β Θ ΙΙ House
ee Octao Naftale Rosenberg.....*Troy*.....2338 15th St., Troy
pm Robert Edward Ross.....*Schenectady*...14 Lakewood Av.
ac Dudley Leon Rowledge.....*Ballston Lake*...Old Gym Dorm.
ee Christian Rumpff*Plattsburg*.....Φ Ν Θ House
pm Hopson Nelson Rust.....*Rensselaer*..1497 Third St., Rensselaer
ee Raymond Thomas Rust.....*Tribes Hill*.....206 Park Av.
ee William Church Hall Ryon....*Poughkeepsie*.....Χ Ψ Lodge
ac Charles Marion Salerno.....*Clyde*.....Old Gym Dorm.
ce Marcus Joseph Salerno.....*Clyde*.....Old Gym Dorm.
ee Gottfried E. F. Schaeffer.....*Tuxedo Park*...103 Nott Terrace
pm Lee Schapiro*New York City*....852 Union St.
ch Francis Frederic Schwentker...*Schenectady*...12 N. Wendell Av.
ee Edwin William Scott.....*Albany*..253 Sheridan Av., Albany
ch Herbert Wells Secor.....*Savanna, Ill.*.....908 Albany St.
ab William Grant Shields.....*Saranac Lake*...119 Lafayette St.
ac Theodore Seymour Shookoff...*Jamaica*.....Κ Ν House
ee Neil Cochran Simpson.....*Tuxedo Park*...103 Nott Terrace
pm John Peter Siurbis....*Amsterdam*..60 Raymond St., Amsterdam
ch Hugh Joseph Slattery, Jr.....*Albany*.....Φ Δ Θ House
pm Edward Small, Jr.....*Schenectady*.....30 Wabash Av.
ac George Nelson Smith, Jr.....*Cooperstown*.....Φ Δ Θ House
ee George Walter Smith.....*Allentown, Pa.*...24 Gillespie St.
ee John Warren Snyder.....*Yonkers*.....127 Park Av.
ce Herbert Stone Soutar.....*Bloomfield, N. J.*.....N. S. N. C.
ac Nathan Corliss Southworth....*Maryland*.....Old Gym Dorm.

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| <i>ad</i> | Rocco Michael Spinelli..... | <i>Glens Falls</i> | 517 Paige St. |
| <i>ee</i> | Harold Bouton Spriggs..... | <i>Asbury Park, N. J.</i> .. | Φ N Θ House |
| <i>ac</i> | Edward Richard Stack..... | <i>Schenectady</i> | 1046 Delamont Av. |
| <i>ee</i> | Leonard Stanley | <i>Albany</i> | Φ Δ Θ House |
| <i>ce</i> | Howard Sevier Steigerwald.... | <i>Auburn</i> | Terrace Club |
| <i>ac</i> | Howard Eddy Stever..... | <i>Schenectady</i> | 9 Chestnut St. |
| <i>ac</i> | Alford Losette Stewart..... | <i>Margaretville</i> | Φ N Θ House |
| <i>ac</i> | Morgan Strong | <i>Schenectady</i> | 818 Union St. |
| <i>ac</i> | Sutherland Rugge Stuart..... | <i>Glens Falls</i> | A Δ Φ House |
| <i>ab</i> | Frank Anthony Sylvester, Jr.. | <i>Schenectady</i> .. | 503 Van Vranken Av. |
| <i>pm</i> | Henry Cole Tallmadge..... | <i>Keeseville</i> | Δ Φ House |
| <i>ac</i> | Stanley Tausend | <i>Mt. Vernon</i> | Z B T House |
| <i>ee</i> | Robert Livingston Ten Broeck.. | <i>Rhinebeck</i> | N. S. N. C. |
| <i>pm</i> | John Cooper Tinklepaugh..... | <i>Peckville, Penna.</i> | 1616 Broadway |
| <i>ac</i> | Alexander Lawrence Toth..... | <i>Schenectady</i> | 818 Albany St. |
| <i>ad</i> | Harold Lewis Turner..... | <i>Batavia</i> | X Ψ Lodge |
| <i>pm</i> | Albert Frank Valada..... | <i>Binghamton</i> | Old Gym Dorm. |
| <i>pm</i> | George De Friest Van Wormer.. | <i>Schenectady</i> | 56 Furman St. |
| <i>ac</i> | Herbert Benedict Volk..... | <i>Schenectady</i> | 35 Bedford Rd. |
| <i>pm</i> | Willard Burrows Warring..... | <i>Maybrook</i> | North Colonnade |
| <i>ch</i> | Arnold Ernest Weichert, Jr.... | <i>Bloomfield, N. J.</i> | K A Lodge |
| <i>ac</i> | Thomas Weiss | <i>Schenectady</i> | 327 Crane St. |
| <i>ee</i> | Gilbert Walter Welsh..... | <i>Watertown</i> | Terrace Club |
| <i>ee</i> | Howard A. Werner..... | <i>Plattsburg</i> | Φ N Θ House |
| <i>pm</i> | Maurice Sanford Wessell..... | <i>Schenectady</i> | 215 Avenue A |
| <i>ac</i> | Henry Martin Weyrauch, Jr.... | <i>Liberty</i> | 103 Nott Terrace |
| <i>ee</i> | Charles Edward Whitcomb, Jr.. | <i>Bernardsville, N. J.</i> | N. S. S. C. |
| <i>ee</i> | Thomas Gale Whitney..... | <i>Mexico</i> | A Δ Φ House |
| <i>ce</i> | W. Elliot Whitney..... | <i>Schenectady</i> .. | 219 Glenwood Blvd. |
| <i>ee</i> | Howard James Whittaker..... | <i>Bloomfield, N. J.</i> | N. S. S. C. |
| <i>ee</i> | Edward Bacon Wilber..... | <i>Schenectady</i> .. | 125 Glenwood Blvd. |
| <i>ee</i> | Wilford Donald Wilder..... | <i>Harrisville</i> | Φ Δ Θ House |
| <i>ee</i> | Claude Douglass Williams..... | <i>Elmira</i> | North Colonnade |
| <i>ee</i> | Clement Tallman Wood..... | <i>Spring Valley</i> | 30 Union Av. |
| <i>pm</i> | Earl John Wylie..... | <i>Schenectady</i> | 11 Belmont Av. |
| <i>ae</i> | William H. Young..... | <i>Schenectady</i> | Old Gym Dorm. |
| <i>ac</i> | Edward Earl Zeiser..... | <i>Schenectady</i> .. | 211 Parkwood Blvd. |

Students in Extension Courses

| | | |
|---------------------|-----------------------|-----------------|
| E. W. Albers..... | <i>Calculus</i> | 1106 Union St. |
| H. M. Bardin..... | " | 105 Front St. |
| R. W. Clifford..... | " | 402 Avenue A |
| A. C. Connell..... | " | 1169 Broadway |
| J. C. Davis..... | " | 5 State St. |
| E. A. Hoxie..... | " | 173 Elder St. |
| E. C. Knowlton..... | " | 145 Furman St. |
| H. J. Pradham..... | " | 17 N. Ferry St. |

Calculus — 8

| | | |
|------------------------|------------------------|---------------------|
| L. W. Beloin..... | <i>Chemistry</i> | 54 Wylie St. |
| J. J. Birch..... | " | 115 Seward Pl. |
| C. F. Buehler..... | " | 327 Veeder Ave. |
| F. P. Coffin..... | " | 1 Glenwood Blvd. |
| J. L. Connolly..... | " | 504 Schenectady St. |
| B. P. Coulson, Jr..... | " | 17 Washington Ave. |
| W. F. Garling..... | " | Ballston Spa |
| S. Lospinoso | " | 717 Cutler St. |
| J. L. Nealon..... | " | 207 Park Ave. |
| R. B. Smith..... | " | 136 Park Ave. |
| R. Williams | " | 823 Emmett St. |
| W. H. Wright..... | " | 13 Stratford Rd. |

Chemistry — 12

| | | |
|------------------------|------------------------|-----------------------|
| W. B. Bradshaw..... | <i>Economics</i> | 907 State St. |
| Mrs. W. L. Fodder..... | " | 5 Jay St. |
| Miss H. Golub..... | " | 615 Lenox Rd. |
| E. H. Hall..... | " | 5 Gillespie St. |
| J. W. Howard..... | " | 206 Glen Ave., Scotia |
| J. G. Kelley..... | " | 451 McClellan St. |
| Miss E. Naumoff..... | " | 331 Avenue A |
| A. Naumoff | " | 331 Avenue A |
| Mr. H. Schaffer..... | " | 19 De Camp Ave. |
| Mrs. H. Schaffer..... | " | 19 De Camp Ave. |
| A. Smith | " | 750 Mott St. |
| E. C. Vrooman..... | " | 207 Union St. |

Economics — 12

| | | |
|--------------------|--------------------------|-------------------|
| B. S. Beach..... | <i>Fund. E. E.</i> | 29 Waverly Pl. |
| W. S. Branks..... | " | 32 Elder St. |
| J. M. Bullis..... | " ..R. F. D. 6, Woodlawn | |
| H. M. Gifford..... | " | 511 Mumford St. |
| S. Lospinoso | " | 717 Cutler St. |
| H. A. Marden..... | " | 211 Seward Pl. |
| D. Millan | " | 822 Lincoln Ave. |
| G. F. Riley..... | " | 880 Lincoln Ave. |
| W. Walker | " | 82 Division St. |
| R. E. Wilson..... | " | 611 Michigan Ave. |

Electrical Engineering Fundamentals — 10

| | | |
|---------------------------|---------------------------|-----------------|
| Miss A. Fortin..... | <i>Elem. French</i> | 70 Union Ave. |
| Mrs. C. M. Helm..... | " | 791 State St. |
| Miss L. E. Jones..... | " | 925 Albany St. |
| B. F. Manion..... | " ...119 Parkwood Blvd. | |
| Miss E. G. Miller..... | "18 S. Wendell Ave. | |
| Mrs. L. D. Pattison..... | " | 979 Albany St. |
| R. G. Waite..... | " | 815 Locust Ave. |
| Mrs. S. L. Whitestone.... | " | 7 Douglass Rd. |
| J. C. Wilburn..... | "14 N. Ferry St. | |
| Miss M. Woolley..... | " | 209 Wright Ave. |

Elementary French — 10

| | | |
|-------------------------|----------------------------|-------------------|
| Mrs. A. M. Derry..... | <i>Inter. French</i> | 206 Rosa Rd. |
| D. Santa-Maria | " | 514 Union St. |
| Mrs. R. L. Garis..... | " | College Hill |
| Miss J. Hamilton..... | " | 1111 Union St. |
| Mrs. E. W. Haven..... | " | 866 Union St. |
| Mrs. J. R. Hewett..... | " | 124 Rosa Rd. |
| Mrs. G. Jagger..... | " ...1411 Eastern P'kway | |
| Mrs. G. W. Jones..... | "Stop 9, Troy Rd. | |
| Mrs. G. D. Kellogg..... | " | College Hill |
| Mrs. H. R. Miller..... | " | 216½ Union St. |
| Miss H. Orford..... | " | 16 University Pl. |
| N. L. Rea..... | "12 Parkwood Blvd. | |

| | | |
|-----------------------|----------------------------|-----------------|
| Miss M. Segall..... | <i>Inter. French</i> | 921 Stanley St. |
| Mrs. P. E. Smith..... | "..... | 105 Waverly Pl. |

Intermediate French — 14

| | | |
|----------------------|-----------------------------|-------------------|
| H. Chamberlain | <i>Locomo. Design</i> | R. F. D. No. 7 |
| E. Eingig | "..... | 216 Bradley St. |
| C. A. Jacobson..... | "..... | 710 S. Ave. |
| C. K. Lam..... | "..... | 1 Union St. |
| F. R. McConvery..... | "..... | 526 Summitt Ave. |
| C. E. Mellin..... | "..... | 1007 Union St. |
| T. J. Walsh..... | "..... | 235 McClellan St. |

Locomotive Design — 7

| | | |
|----------------------|----------------------------|--------------------|
| E. C. Bogle..... | <i>Mech. Drawing</i> | 705 S. Avenue |
| M. E. J. Butler..... | "..... | 7 N. College St. |
| R. L. Dormandy..... | "..... | 9 Frank St. |
| C. H. Ribley..... | "..... | R. F. D. 6 |
| M. Romano | "..... | 14 Haigh Ave. |
| F. Rullan | "..... | 791 State St. |
| F. W. Schutte..... | "..... | 20 N. Wendell Ave. |

Mechanical Drawing — 7

| | | |
|--------------------------|-------------------------|-----------------------|
| Miss H. Brown..... | <i>Psychology</i> | 1207 Union St. |
| Mrs. J. H. Callanan..... | "..... | 8 So. Church St. |
| Miss E. M. Coplon..... | "..... | 108 Crane St. |
| Miss R. Friedman..... | "..... | 360 Snowden Ave. |
| Mrs. E. M. Hewlett..... | "..... | 69 Union Ave. |
| Miss E. E. Hoenev..... | "..... | 138 Park Pl. |
| G. E. Hollister..... | "..... | 1041 Delamont Ave. |
| Miss M. E. Jewell..... | "..... | 40 Glenwood Blvd. |
| J. G. Kelley..... | "..... | 451 McClellan St. |
| J. J. Koch..... | "..... | 955 Albany St. |
| Miss C. Liepman..... | "..... | 206 Hulett St. |
| Miss M. A. Magee..... | "..... | 207 James St., Scotia |
| W. L. Mayer..... | "..... | 1 Rugby Rd. |
| Miss E. F. Peck..... | "..... | 119 University Pl. |
| H. O. Peterson..... | "..... | 14 N. Ferry St. |
| Miss Y. Romanoff..... | "..... | 558 Broadway |

| | | |
|----------------------|-------------------------|--------------------|
| R. E. Rugen..... | <i>Psychology</i> | 169 Plymouth Ave. |
| R. Schurig | " | 712 Union St. |
| W. J. Sevitz..... | " | 606 Terrace Pl. |
| E. E. Spencer..... | " | 25 N. Dean St. |
| S. N. Sprague..... | " | 14 Front St. |
| E. J. Stewart..... | " | 27 Belmont Ave. |
| W. W. J. Wemple..... | " | 130 University Pl. |
| E. J. Zanow..... | " | 151 Nott Terrace |

Psychology — 24

| | | |
|----------------------|---------------------------|----------------------------|
| E. G. Bern..... | <i>Public Speaking</i> .. | 605 Mohawk Ave., Scotia |
| K. O. J. Butler..... | " | 7 N. College St. |
| F. D. Fulton..... | " | 19 N. Ferry St. |
| R. A. Marden..... | " | 211 Seward Pl. |
| I. Sacharoff | " | 304 Congress St. |
| H. Schaffer | " | 19 De Camp Ave. |
| R. Schurig | " | 712 Union St. |
| C. W. Shaw..... | " | 117 Harrison Ave. |
| G. W. Slaght..... | " | R. F. D. 7 |
| E. Zanow | " | 151 Nott Terrace |

Public Speaking — 10

| | | |
|--------------------------|--------------------------|-------------------|
| R. O. Ackerman..... | <i>Steam Power</i> | 16 Front St. |
| E. C. Bogle..... | " | 705 S. Avenue |
| G. L. Brown..... | " | Rensselaer, N. Y. |
| J. B. Fink..... | " | West Albany |
| A. A. Hollingsworth..... | " | 9 Frank St. |
| E. Johnson | " | 149 Howard St. |
| R. L. Johnson..... | " | 608 Pleasant St. |
| A. G. Peterson..... | " | 962 State St. |
| W. J. Woods..... | " | 1 State St. |
| J. W. Young..... | " | 7 Palmer Ave. |

Steam Power — 10

Summary of Students, Union College

| | |
|---------------------------------------|-------|
| Graduate Students (in residence)..... | 39 |
| Seniors. | 107 |
| Juniors. | 135 |
| Sophomores. | 152 |
| Freshmen. | 245 |
| | <hr/> |
| | 678 |
| Extension Course Students | 124 |
| | <hr/> |
| Total. | 802 |

STUDENTS OF THE ALBANY MEDICAL COLLEGE

Fourth Year Class

| | |
|-----------------------------------|------------------|
| Raphael A. Bendove..... | Haifa, Palestine |
| Harold Roberts Browne..... | Cobleskill |
| Harold William Dargeon..... | New York City |
| Alvah Robert Davignon..... | Corinth |
| Ames L. Filippone | Newark, N. J. |
| William Mitchell Mallia..... | Schenectady |
| Jere John McEvilly..... | Johnstown |
| Charles Fayette Rourke..... | Holyoke, Mass. |
| Harold Daniel Sehl..... | Albany |
| George Oliver Tremble..... | Saranac Lake |
| Beverly Leland Vosburg, A. B..... | Schenectady |
| John Charles Younie, A. B..... | Schenectady |

Fourth Year Class — 12

Third Year Class

| | |
|------------------------------------|-------------------|
| Clarence F. Ackerknecht, A. B..... | Johnstown |
| Lucy Elizabeth Bourn, Ph. B..... | Providence, R. I. |
| John Quinn Donahue | Cohoes |
| Samuel William Ebenfeld..... | Newark, N. J. |
| David Henry Faulknor..... | Amsterdam |
| Ruth Gilbert, A.B., A. M..... | Albany |
| Raymond Ignace Gosselin | Troy |
| Edwin Gordon MacKenzie, A. B..... | Millbrook |
| Edward S. McDowell..... | Albany |
| Nitya Pauvedya | Bangkok, Siam |
| Ferdinand Louis Perrone..... | Sheepshead Bay |
| Louis Simon Poskanzer..... | Albany |
| Jasper/Lewis Robertson..... | Hoosick Falls |
| Li Sribyatta | Bangkok, Siam |
| Henry Lewis Turkel..... | Kiamesha, N. Y. |

Third Year Class — 15

Second Year Class

| | |
|------------------------------------|------------------|
| Philip Daly Allen | Schuyler Lake |
| Jean Mason Archibold, A. B..... | Cohoes |
| George Joseph Bookstein..... | Albany |
| Katherine Grace Brockman..... | Saratoga Springs |
| *John Bruce | Schenectady |
| James William Bucci..... | Albany |
| Louis Caplan | Albany |
| *Sara Casey | Cohoes |
| John Francis Connor..... | Green Island |
| Kenneth Eugene Crounse, A. B..... | Albany |
| Anthony Devito | Brooklyn |
| Elton R. Dickson, B. S..... | Hoosick Falls |
| Bernard Desick..... | New York City |
| Earl John Dorwalt, A. B..... | Albany |
| Grant Frederick Glassbrook..... | Corinth |
| George Herbert Gonyea | Schenectady |
| Charles Howard Harbinson..... | Rensselaer |
| Daniel Earl Kavanaugh..... | Cohoes |
| *Margaret Kennedy | Cambridge |
| Charles Edward Martin..... | Schenectady |
| Thomas Robert McCool | Glens Falls |
| Douw Schuyler Meyers..... | Randall |
| Francis Mulcare | Schenectady |
| Frederick John Pratt..... | Albany |
| William Schwartz | Paterson, N. J. |
| Isaac Shapiro | Schuylerville |
| Irving Silverman | Schenectady |
| Max Michael Simon..... | Poughkeepsie |
| Moses Simon | New York City |
| Francis Leslie Sullivan, B. S..... | Middleburg |
| Harold Field Teed..... | East Masonville |
| Francis Alexander Teta..... | Brooklyn |
| David Henry Vrooman | Randall |

Second Year Class — 33

* Special Student

First Year Class

| | |
|--|--------------------|
| Henry Higginson A. Blyth, A. B..... | Troy |
| Benjamin Friedland Cohen | Albany |
| John Kenneth Deegan | Newburgh |
| Anthony Julius Derkowsky | Troy |
| Stanley Roderick Dixon | New Britain, Conn. |
| Francis William Dodge | Rosiere |
| Kenneth Charles Dutton | West Winfield |
| Theron S. Fay | Argusville |
| Philip Louis Forster | Albany |
| Eugene Frederick Galvin | Cadyville |
| Herbert Corle Hageman | Claverack |
| Joseph L. Holohan | Waterford |
| Henry Dunham Hunt | Albany |
| Francis J. Hyland | Gloversville |
| Stanley Pritchard Jones | Schenectady |
| Emerson Crosby Kelly | Fleischmanns |
| Franklyn L. Kessler | Peekskill |
| Joseph Anthony Lewandowski | Schenectady |
| Stuart Forbes MacMillan, B. S..... | Schenectady |
| *John Henry Maloney, Jr..... | Troy |
| Walter Floyd Messenger | Stillwater |
| Walter Charles Mott | Schenectady |
| Leal Luther Perry | Rushville |
| George F. Reed, A. B..... | Cohoes |
| Harry E. Reynolds | Garfield |
| D. Edward Rowan | Stapleton |
| James Edison Smith | Schenectady |
| Willard Hamilton Sweet, Jr..... | Petersburg |
| Arthur J. Townley | Schenectady |
| Philip Stanley Van Orden | Spring Valley |
| Kenneth C. Waddell, B. S. in C. E..... | Sao Paulo, Brazil |
| G. Paul Whitbeck, A. B..... | Albany |

First Year Class — 32

* Special Student

Summary of Students, Albany Medical College

| | |
|-------------------------|-------------|
| Fourth year Class | 12 |
| Third Year Class | 15 |
| Second Year Class | 33 |
| First Year Class | 32 |
| | <hr/> |
| Total. | 92 |
| | <hr/> <hr/> |

STUDENTS OF ALBANY LAW SCHOOL

Third Year Class

| | |
|------------------------------|------------------|
| Martin J. Barry..... | Troy |
| Alexander M. Baynes..... | Troy |
| John A. Behan..... | Troy |
| Edward W. Bock..... | Utica |
| Donald F. Boyle..... | Amsterdam |
| Frank L. Brandt..... | Cohoes |
| Francis T. Brennan..... | Schenectady |
| Charles A. Brind, Jr..... | Albany |
| Mark R. Brinthaup..... | Elmira |
| Anthony Bruzdinski..... | Schenectady |
| Leland B. Bryan..... | Bath |
| Roy Buhrmaster..... | Scotia |
| David W. Burke..... | Saratoga Springs |
| Douglas A. Calkins..... | Rensselaer |
| Truman D. Cameron..... | Albany |
| Katharine F. Carroll..... | Cohoes |
| David Cohen | Rochester |
| Morris P. Cohen..... | Rochester |
| Jacob A. Comisky..... | Utica |
| Thomas R. Connery..... | Cohoes |
| Anthony J. Contiguglia..... | Auburn |
| F. Elden Coons..... | Newburgh |
| Percy W. Curry..... | Rochester |
| James J. Delaney..... | Watervliet |
| Stephen DellaRocca | Schenectady |
| Arthur C. Downing..... | Mechanicville |
| Herbert S. Duncombe, Jr..... | New York City |
| Thomas J. Dwyer..... | Amsterdam |
| Harry Frumkin | Schenectady |
| Nellie Gilchrist | Ilion |
| Harry L. Gilrie..... | Lockport |
| Edmund J. Glacken..... | Amsterdam |
| James H. Glavin, Jr..... | Waterford |
| Herman P. Greene..... | Albany |
| F. Stanley Griffin..... | Clinton |

| | |
|-----------------------------|------------------|
| Jacob J. Guzzetta..... | Mt. Morris |
| George W. Harder..... | Albany |
| Lester A. Harris..... | Brushton |
| Kenneth H. Holcombe..... | Rouses Point |
| Burrell L. Hoyt..... | Albany |
| Charles M. Hughes..... | Ilion |
| Earl Smith Jones..... | Hinsdale |
| Arthur E. Kaley..... | Milton |
| Gilbert C. Kastensmith..... | Schenectady |
| Stephen H. Keating..... | Waterford |
| Jacob G. Krouner..... | Albany |
| John A. LaBate..... | Danbury, Conn. |
| Robert J. Laffin..... | Berlin, N. H. |
| Roland E. LaGrange..... | Schenectady |
| Charles Lambiase..... | Rochester |
| Frances M. Lang..... | Saratoga Springs |
| Francis J. Lawler..... | Rome |
| L. Edward Leary..... | Bergen |
| LaVerne G. Lewis..... | Stamford |
| Frederic A. Loeffler..... | Albany |
| William H. McCann..... | Berlin, N. H. |
| Ettore Mancuso..... | Schenectady |
| Merton D. Meeker..... | Binghamton |
| David J. Meyerhoff..... | Schenectady |
| LeRoy E. Middleworth..... | Albany |
| Gregory F. Mills..... | Rochester |
| John L. Moore..... | Troy |
| Daniel B. Murphy..... | Cohoes |
| Gerald W. O'Connor..... | Waterford |
| Frank Pedlow, A. B..... | Albany |
| Carl W. Peterson..... | Ilion |
| William H. Phelps..... | Sidney |
| Kinley L. Phillips..... | Conewango |
| Thomas A. Powers..... | Clinton |
| J. Howard Proper, A. B..... | Schoharie |
| Walter J. Relihan..... | Owego |
| Edward L. Ryan..... | Troy |
| Frank E. Sacco..... | Utica |

| | |
|--------------------------------|--------------------|
| John D. Saunders..... | Prattsburg |
| William K. Shyne..... | Troy |
| Henry J. Smith..... | Schenectady |
| Alfred T. Stewart..... | Rochester |
| Edmund C. Sullivan..... | Albany |
| Brenton T. Taylor, A. B..... | Glens Falls |
| Donald S. Taylor, A. B..... | Troy |
| Arthur B. Town..... | Dunkirk |
| Frank B. Valentine, Jr..... | Troy |
| Stephen J. Vanderlick..... | Northampton, Mass. |
| Edward R. Waite..... | Fort Ann |
| Thomas W. Wallace, Jr..... | Schenectady |
| Walter H. Wertime, Jr..... | Cohoes |
| Clarence E. Wills..... | Chateaugay |
| C. Vincent Wiser..... | Rochester |
| John Smith Woodward, B. S..... | Saratoga Springs |
| Floyd J. Young..... | Central Bridge |

Third Year Class — 90

Second Year Class

| | |
|-----------------------------|-------------------|
| Gladys J. Ackart..... | Albany |
| Miriam J. Albee..... | Albany |
| Emilio Aldrey..... | San Juan, P. I. |
| James J. Armstrong..... | Albany |
| Abram Averbach..... | Schenectady |
| Michael J. Bartholomew..... | Troy |
| James W. Bennison..... | Frankfort |
| Francis Bergan..... | Albany |
| William P. Boyle..... | Jamestown |
| John A. Brady..... | Pittsfield, Mass. |
| M. J. Margaret Brahe..... | Utica |
| C. Edward Brown..... | Shortsville |
| Floyd S. Brownell..... | Medusa |
| Francis J. Burns..... | Rensselaer |
| Milton A. Chase..... | Rochester |
| Ruth K. Child, A. B..... | Albany |
| Elmer Clapp..... | Bloomfield, N. J. |
| Jacobo Cordovo, Jr..... | Santurce, P. R. |

| | |
|-----------------------------|-----------------|
| Samuel J. Danno..... | Rochester |
| Joseph J. D'Aprile..... | Geneseo |
| Reginald H. Davies..... | Beacon |
| Matthew E. Devitt..... | Montgomery |
| Edward G. Dillon..... | Watervliet |
| James L. Doyle..... | Amsterdam |
| George Dwore | Schenectady |
| Harriet R. Edic..... | Utica |
| Charles J. Eignor..... | Albany |
| Abraham P. Feen..... | Burlington, Vt. |
| Joseph L. Fitzgerald..... | Troy |
| Frederick T. Freeman..... | Albany |
| Joseph F. A. Gallagher..... | Albany |
| Kenneth W. Glines | Granville |
| Charles Goldstein..... | Hoosick Falls |
| Bartle Gorman, A. B..... | Utica |
| John O. Grady..... | Waterford |
| Alexander Grasso | Schenectady |
| Edward J. Grogan, Jr..... | Albany |
| Clarence Gunderman | Bath |
| Gordon B. Harris..... | Rochester |
| William Heinecke, Jr..... | Albany |
| Sidney T. Hewes..... | Mayville |
| William H. Hiney..... | Albany |
| Robert F. Hinkelman..... | Albany |
| Martin J. Howard..... | Albany |
| Russell G. Hunt..... | Albany |
| Meyer A. Jeneroff..... | Albany |
| Smith Johnson | Camden |
| Stanley B. Johnson..... | Middletown |
| William L. Keller..... | Albany |
| Alfred D. Kelly..... | Watervliet |
| Arthur L. Kraut..... | Schenectady |
| Earle W. Lawrence..... | Troy |
| Melvern Lovell..... | Elmira |
| John J. Maher..... | Albany |
| Stanley M. Miller..... | Utica |
| Joseph Molinari | Oneonta |

| | |
|---------------------------|------------------|
| John M. O'Rourke..... | Malone |
| William T. Potter..... | Schenectady |
| Richard W. Preston..... | Watervliet |
| Thomas B. J. Quinn..... | Utica |
| Michael L. Rogers..... | LeRoy |
| Frank T. Ropiecki..... | Utica |
| Joseph A. Ryan..... | Troy |
| Marion I. Ryan..... | Schenectady |
| N. Bernard Silberg..... | Albany |
| Joseph W. Skoda..... | Schenectady |
| Emmens E. Stebner..... | Hudson |
| Francis J. Stewart..... | Ogdensburg |
| Luis H. Tirado..... | San Juan, P. R. |
| Milo I. Tomanovich..... | Rochester |
| Cecil B. Tooker..... | Riverhead |
| John Guy Torbert..... | Ithaca |
| Jerome B. Tyne..... | Binghamton |
| James R. Waring..... | Rochester |
| John T. White, Jr..... | Saratoga Springs |
| Ansley Wilcox, 2nd..... | Castleton |
| Leland R. Yost..... | Bath |
| William S. Zielinski..... | Rochester |

Second Year Class — 78

First Year Class

| | |
|-----------------------------|-------------------|
| Felix J. Aulisi..... | Amsterdam |
| Robert S. Badger..... | Binghamton |
| Donald H. Balch..... | Scotia |
| Malcoln Bibby | Albany |
| Arthur H. Blackburn..... | Danbury, Conn. |
| Gerald W. Bouck..... | Albany |
| Albert Karl Braim..... | Greenfield Center |
| Peter J. Carroll..... | Schenectady |
| R. M. Castilan..... | Clyde |
| Daniel E. Conway..... | Troy |
| Francis W. A. Chrystal..... | Newburgh |
| Russell B. Cline..... | Rochester |
| Mary D. Connell..... | Rensselaer |

| | |
|-----------------------------|----------------|
| Walter N. Connell..... | Watervliet |
| Harry B. Coonrod..... | Lewis |
| Burton T. Corning..... | Auburn |
| David W. DeLee, Jr..... | Troy |
| Peter Demary | Watkins |
| Joseph E. Deutschbein..... | Albany |
| Franklyn A. Dobbs..... | Albany |
| Meyer Dobris | Albany |
| Thomas S. Donohue..... | Cohoes |
| William F. Donohue..... | Troy |
| Harold V. A. Drumm..... | Niverville |
| Richard Eagle | Schenectady |
| Kenneth S. Ellsworth..... | Glens Falls |
| Samuel Englehardt | Schenectady |
| Julian B. Erway..... | McGraw |
| Sadie R. Feinson..... | Danbury, Conn. |
| Joseph Feldman | Albany |
| Jeanette Felson | Schenectady |
| Charles C. Flaesch, Jr..... | Unadilla |
| Thomas Fogarty | Binghamton |
| Donald S. Fowler..... | Jamestown |
| George W. Foy..... | Saranac Lake |
| W. Irving Francis..... | Syracuse |
| Morris Freedman | Utica |
| Joseph P. Frushone..... | Silver Creek |
| Roy A. Fuller..... | Sacket Harbor |
| Simon A. Gerlek..... | Glens Falls |
| Clarence F. Giles..... | Watertown |
| Paul D. Gormley..... | Schenectady |
| Augustive E. Graubart..... | Schenectady |
| Edwin L. Greene..... | Kingston |
| Charles Grosberg | Troy |
| Thomas R. Hadaway..... | Montgomery |
| Peter H. Harp..... | New Paltz |
| J. Burdette Hasper..... | Belfast |
| LeRoy F. Heidenreich..... | Albany |
| Aaron Hendler | Hudson |
| Aloysius J. Hogan..... | Albany |

| | |
|---------------------------|--------------------|
| Joseph F. Iacovino..... | Auburn |
| Edward Jerdon..... | North Adams, Mass. |
| James A. Joblin..... | Schenectady |
| Arthur O. Jones..... | Granville |
| Edward S. Kampf..... | Albany |
| Joseph P. Keenan..... | Albany |
| Walter H. Keenholts..... | Rensselaer |
| Vernon J. Kelder..... | Napanoch |
| Patrick Keniry | Mechanicville |
| Harry E. Kesler..... | Cortland |
| McDonald King | Schenectady |
| Leon Klein | Albany |
| Leo Krause | Schenectady |
| Kathryn M. Lasch..... | Albany |
| Fulmer Long | Corning |
| John H. MacGregor..... | Saratoga Springs |
| Maurice McCann | Penn Yan |
| Lawrence J. McGovern..... | Schenectady |
| Frank G. McLean..... | Chenango Forks |
| Thomas F. Maher..... | Albany |
| Armand A. Mancuso..... | Schenectady |
| Edward J. Mason..... | Albany |
| Curtis N. Merring..... | Bergen |
| William Mulflur, Jr..... | Saranac Lake |
| Earl W. Nicklas..... | Schenectady |
| George J. Nier..... | Rochester |
| Joseph A. Niles..... | Troy |
| Alan L. Castler..... | Geneva |
| William D. O'Brien..... | Albany |
| F. Claude O'Connell..... | Plattsburg |
| James O'Connell | Plattsburg |
| Leo W. Perrella..... | Manchester |
| Ralph A. Peters..... | Schenectady |
| Clarence B. Plantz..... | Amsterdam |
| Warren T. Ratcliff..... | Albany |
| Ruth R. Reedy..... | Albany |
| Harry A. Reoux..... | Warrensburgh |
| John M. Reynolds..... | Fulton |
| Joseph Rickards | Albany |

| | |
|--------------------------|-------------------|
| Ernest B. Rieck..... | Albany |
| David Robinson | Pittsfield, Mass. |
| Ruth Rosenholtz | Troy |
| Solomon Rubenstein | Albany |
| Benjamin J. Segel..... | Schenectady |
| Alec Silverman | Glens Falls |
| Clarence G. Simmons..... | Troy |
| Morris Simon | Troy |
| John W. Sisson | Alton |
| Edward H. Smith..... | Schenectady |
| Ralph P. Smith..... | Hudson Falls |
| Claron G. Soule..... | Manchester, Vt. |
| Fred A. Staedeli..... | Saratoga Springs |
| Abraham Steinberg | Schenectady |
| George E. Thompson..... | Cohoes |
| Isaac Tobachnek | Albany |
| Frank A. Vidulich. | Frankfort |
| Arthur H. Vinett..... | Troy |
| Joseph E. Walsh..... | Troy |
| Carl Weiss | Schenectady |
| Louis Orren Welt..... | Ogdensburg |
| Lealand J. Winn..... | Ghent |
| Theodore F. Wilson..... | Schenectady |

First Year Class — 113

Special Students

| | |
|-------------------------|---------------|
| Mabel D. Fenton..... | Margaretville |
| Edward V. Guinnane..... | Jamestown |
| Dorothy E. Marden..... | Albany |

Special Students — 3

Summary of Students, Albany Law School

| | |
|------------------------|-----|
| Third Year Class..... | 90 |
| Second Year Class..... | 78 |
| First Year Class..... | 113 |
| Special Students | 3 |
| Total. | 284 |

STUDENTS OF THE ALBANY COLLEGE OF PHARMACY

Third Year (Ph. C.) Class

| | |
|--------------------------|-------------|
| John C. Bruce..... | Schenectady |
| Margaret H. Kennedy..... | Cambridge |
| Frank Ruscitto | Schenectady |
| Third Year Class — 3 | |

Second Year Class

| | |
|---------------------------------|-----------------|
| Harold Travis Allen..... | Lowville |
| Edward Thomas Ahearn..... | Albany |
| Clarence Dumas Archambault..... | Plattsburg |
| Barney S. Aronson..... | Glens Falls |
| Alice E. Bartholomew..... | Whitehall |
| Harold E. Becker..... | Schenectady |
| George J. Brown..... | Scranton Pa. |
| Avery C. Cole..... | Binghamton |
| William T. Conroy..... | Milton |
| Edward Nevel Crosbie..... | Albany |
| Michael J. Daley..... | Saranac Lake |
| Harry A. Dodge..... | Johnstown |
| Bernard R. Dolan..... | So. Glens Falls |
| Kenneth W. Edgett..... | Syracuse |
| Raymond E. Ellis..... | Alfred |
| Joseph Feinburg | Albany |
| Moncrief Francis | Troy |
| Leroy L. French..... | Sherburne |
| Dominic J. Gilligan..... | Elizabethtown |
| Adrian C. Gonyea..... | Albany |
| Frank W. Gorthey..... | Broadalbin |
| Ezra E. Guernsey..... | Cobleskill |
| Umber C. Guerra..... | Schenectady |
| Kenneth G. Haggerty..... | Ilion |
| Karl Hallenbeck | Oneonta |
| Hugh D. Hyde..... | Malone |
| William Jacofsky | Albany |
| Milton Hughes | Schuylerville |

| | |
|-------------------------------|------------------|
| Louis Jaffe | Albany |
| David S. Kaplan..... | Syracuse |
| William E. Kenny..... | Auburn |
| Albertis P. Kircher..... | Albany |
| Henry G. Klein..... | Albany |
| Garabad Kuljian | Albany |
| Samuel Kurzrok | Troy |
| James Vivian LeGrys..... | Cambridge |
| William Lippman | Albany |
| S. Ellsworth Mather..... | Schenectady |
| James Edward MacLeod..... | Massena |
| Arthur Paul McCann..... | Greenwich |
| John F. McGrath..... | Livingston Manor |
| Alton T. McMahon..... | Walloomsac |
| Russell C. Priess..... | Canajoharie |
| John J. Purcell..... | Troy |
| Joseph T. Quest..... | Troy |
| Helen Radding | Albany |
| William Roberts | Philadelphia |
| R. Ellsworth Roblee..... | North Creek |
| John Anthony Rogers..... | Amsterdam |
| Robert Charles Russo..... | Rochester |
| Arnold Frederick Schwarz..... | Port Henry |
| W. Bernard Skinner..... | Westford |
| Thomas A. Snyder..... | Hudson |
| Frank A. Squires..... | Deposit |
| Esther C. Stafford..... | Essex |
| Alice M. Sturtevant..... | Glens Falls |
| Julius Frank Szykowski..... | Amsterdam |
| Rupert W. Thorpe..... | Hoosick Falls |
| Joseph C. Tusso..... | Mt. Morris |
| John Nickodemus Varnes..... | Amsterdam |
| John Clinton Waters..... | Waterville |
| Frank J. Welicka..... | Amsterdam |
| Frank A. Yaguda..... | Albany |
| Kenneth H. Zeh..... | Kingston |

First Year Class

| | |
|--------------------------------|-------------------|
| Michael Auerbach..... | Brooklyn |
| Byron Howard Barnhart..... | Sodus |
| Emanuele Bondi | Rochester |
| Dewey Ferdinand Bonner..... | Lyons Falls |
| Paul J. Brodeur, Jr..... | Rensselaer |
| Charles Wesley Brooks..... | Minoa |
| Robert MacLean Bruce..... | Schenectady |
| Edward Cohen | Albany |
| Paul James Constantino..... | Mt. Morris |
| Nicholas Joseph Covatta..... | Troy |
| Peter Danzilo | Sheepshead Bay |
| Burdette Gage Dewell, Jr..... | Windham |
| Francis Joseph Dunn, Jr..... | Ballston Spa |
| Ely Eber | Rochester |
| Douglas D. Foody..... | Fultonville |
| Albert Joseph Freeman..... | Rome |
| Charles Wilson Fuhrer..... | Roscoe |
| Rodney Bayer Gallagher..... | Wellsville |
| Clyde Watson Graves..... | Clayton |
| Edward J. Haggerty..... | Cohoes |
| Clarence Edward Haynes..... | Potsdam |
| George Olive Holmes..... | Salem |
| William S. Inglee..... | Whitehall |
| Bernice Ellen Johnston..... | Sheffield, Pa. |
| Harry Oscar Kantrowitz..... | Fall River, Mass. |
| Theodore Spencer Kelly..... | Gloversville |
| Thomas J. Kelly..... | Utica |
| Vincent James Kennah..... | Albany |
| Raymond Klebes | West Cossackie |
| Emil Gilbert Koretz..... | Albany |
| Louis Philip Kotok | Brooklyn |
| Homer M. Lasher..... | North Troy |
| Joseph Bernard Laurence..... | Gloversville |
| Zdzislaw John Lesiakowski..... | Amsterdam |
| Claud J. Lawler..... | Pulaski |
| Clarence P. Lawler..... | Pulaski |

| | |
|-----------------------------|-------------------|
| Ellis Herman Liberman..... | Syracuse |
| Thomas C. Lodge..... | New York City |
| Francis Henry Lonergan..... | Green Island |
| Albert Abraham Massad..... | Gloversville |
| Harold James Maxwell..... | Schenectady |
| Harry James McClellan..... | Oneonta |
| Robert J. McLane..... | Redford |
| Alexander L. Morey..... | Amsterdam |
| Emma Cooper Myers..... | Schenectady |
| Harry Francis O'Brien..... | Utica |
| James Jerome O'Leary..... | Binghamton |
| Donald Brooks Olive..... | West Burlington |
| Edward M. O'Malley..... | Saratoga Springs |
| Margaret Ostrander..... | Duanesburg |
| Anthony Pacilio | Utica |
| Arthur Sherman Palmer..... | Oneonta |
| Earl Child Parker..... | Mexico |
| L. Austin Peach..... | Gloversville |
| Roy C. Rasmuson..... | Albany |
| Thomas H. Reeves..... | Schenectady |
| John Moore Reichard..... | Pittsfield, Mass. |
| Jack Rheingold | East Schodack |
| Kenneth J. Roseboom..... | Albany |
| Frances K. Rosensweig..... | Albany |
| Carl Harold Ruhl..... | Albany |
| C. Howard Russell..... | Warrensburg |
| Francis George Scanlon..... | Norwich |
| Martin L. Scharbach..... | Boonville |
| Milton Connor Scott..... | Middletown |
| Howard Frederick Shank..... | Union Springs |
| Alfred William Smith..... | North Troy |
| George Bernard Smith..... | Mechanicville |
| Daniel John Spadaro..... | Albany |
| David Strauss | Albany |
| Edwin W. Taylor..... | Saranac Lake |
| Hugh William Thomas..... | Rome |
| Joseph Vincent Walsh..... | Glenhaam |
| Leslie B. Warren..... | Utica |

| | |
|---------------------------|----------------|
| Lazarus Weinstein | Syracuse |
| Joseph Francis Welch..... | Binghamton |
| Stuart King Wood..... | East Greenbush |
| First Year Class — | 77 |

Summary of Students, Albany College of Pharmacy

| | |
|------------------------|-------------|
| Third Year Class..... | 3 |
| Second Year Class..... | 64 |
| First Year Class..... | 77 |
| | <hr/> |
| Total. | 144 |
| | <hr/> <hr/> |

SUMMARY OF STUDENTS, UNION UNIVERSITY

| | |
|----------------------------------|-------------|
| Union College | 802 |
| Albany Medical College | 92 |
| Albany Law School | 284 |
| Albany College of Pharmacy | 144 |
| | <hr/> |
| Total. | 1,322 |
| | <hr/> <hr/> |

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